I. THE UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES (USU)

The University community completed the Year 2001 with renewed dedication to public service and its mission-driven goal of "Learning to Care for Those in Harm's Way." In accordance with strategic guidance, the University has continued its focused attention on: RELEVANCE - the critical nature of its unique mission to provide continuity, leadership, and responsiveness to the special needs of the Military Health System (MHS); READINESS - the provision of physicians, advanced practice nurses, and graduate degree recipients who are uniquely qualified to respond to the aftermath of weapons of mass destruction (WMD) and to provide assistance during humanitarian, disaster, or operational contingencies; and, OPTIMIZATION - the cost-effective management of its resources to ensure the generation of annual cost avoidance for the MHS through its multiple, fully accredited programs (estimated cost avoidance during 2001 was $23.3 million).

ESTABLISHMENT, DEVELOPMENT, AND GOVERNANCE

The Uniformed Services Health Professions Revitalization Act of 1972 Establishes the University. Public Law 92-426, the Uniformed Services Health Professions Revitalization Act of 1972, established the University as a separate agency within the Department of Defense (DoD). Planning for the development of USU began with the **President of the United States Richard Nixon's** appointment of a Board of Regents and **Dr. Anthony R. Curreri** as the University's first President in 1974. Initial efforts were focused on establishing the USUHS School of Medicine (SOM) as the University's first academic program.

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Collaborative Efforts by the Joint Services and Civilian Medical Communities in the Development of the University. The initial development of objectives for the USUHS SOM was accomplished through the combined efforts of the Board of Regents; the Board of Regents' Educational Affairs Committee; **Dr. Curreri**; the USUHS SOM Dean, **Dr. Jay Sanford**; and, special working groups. Activities used to develop these objectives included committee meetings, retreats, and consultation with a variety of experts from military medicine and civilian medical organizations and institutions. Individuals and groups consulted included: the Surgeons General of the Army, Navy, and Air Force; Chiefs of the Medical Departments/Services of the Army, Navy, and Air Force; physicians from the Walter Reed Army Medical Center, the National Naval Medical Center at Bethesda, the Malcolm Grow U.S. Air Force Medical Center at Andrews Air Force Base, the Wilford Hall U.S. Air Force Medical Center, the U.S. Army Academy of Health Sciences, the Sheppard Air Force Base Academy of Health Sciences, the Brooke Army Medical Center, and the Armed Forces Institute of Pathology; the Secretary of the Air Force; the Secretary of the Navy; the Association of American Medical Colleges (AAMC); the American Medical Association (AMA); the Liaison Committee on Medical Education (LCME); the Department of Health, Education, and Welfare; the National Institutes of Health (NIH); George Washington University; Georgetown University; and, Howard University. The fine tradition of the University's identifying and responding to the special needs of the Uniformed Services has been an on-going process since 1974.

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DoD Directive 5105.45. Significant changes in the USU governance structure resulted from actions taken during 1991. On April 15, 1991, the Secretary of Defense revised the DoD Directive for Health Affairs, 5136.1, to delegate responsibility for the University from his office to the Assistant Secretary of Defense for Health Affairs (ASD/HA). The authority to appoint the President of the University was retained by the Secretary of Defense. On April 19, 1991, the DoD Directive for USU, 5105.45, was updated to reflect those changes and to define in detail the mission, organization, responsibilities, functions, relationships, authorities, and governance of the University. In a memorandum dated May 3, 1991, the ASD/HA redelegated the authority for the day-to-day management of the University to the USUHS President; the current delegation of authority to the USUHS President for the on-going management of the University is also included in DoD Directive 5105.45. (A copy of the current revision of DoD Directive 5105.45, dated March 9, 2000, is at Appendix A.)

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Board of Regents Charter. Prior to 1991, the USU Board of Regents (BOR) had been an independent policy-making body; it is now an advisory body to the Secretary of Defense. A Charter for the BOR was approved by the Office of the Secretary of Defense (OSD) on April 1, 1991 (the most current edition of the BOR Charter is dated April 4, 2001). The Charter defines the objectives and scope of the BOR to: 1) provide advice and guidance to the Secretary of Defense through the ASD/HA for the operation of USU; and, 2) assure that the University operates in the best tradition of academia and is in compliance with the appropriate accreditation authorities. The USU administration and faculty provided substantial input into the revision of both the USU DoD Directive and the BOR Charter. As a result, the administrative/governance documents of 1991 reflected the coordinated efforts of the ASD/HA, the BOR, the USU administration and activity heads, SOM department chairpersons, the SOM Faculty Senate, and the Dean's Executive Advisory Committee. In addition, during this process, the Acting Dean of the SOM coordinated with and briefed the LCME and the Commission on Higher Education of the Middle States Association of Colleges and Schools to ensure compliance with the University's accrediting entities on issues regarding governance and administration. And, on February 6, 2001, the BOR Bylaws were updated and approved. (Copies of the current BOR Charter and Bylaws are at Appendix A.)

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USU - The 1998 Defense Reform Initiative. In November of 1997, **William Cohen, Secretary of Defense,** substantiated his support of the University by including USU as part of his Fiscal Year 1998 Defense Reform Initiative (DRI). Program Budget Decision (PBD) 711 issued on December 17, 1997, outlined the DRI and moved USU from under the direct oversight of the Office of Health Affairs, Office of the Secretary of Defense (OSD), to the collective oversight of the Surgeons General of the Army, Navy and Air Force. The PBD ensured manpower and funding for USU and established the Surgeon General of the Navy as the Executive Agent for program, budget, and funding execution responsibilities. The PBD also directed that the University's funding would continue to be programmed, budgeted, and executed within the Defense Health Program.

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The Establishment of the USU Executive Committee. The administrative process for fiscal matters was defined during 1998 by the ASD/HA, in consultation with the USU BOR, the USU administration, and the Surgeons General. As a result, DoD Directive 5105.45, was updated on May 17, 1999, to include the formal establishment of the USU Executive Committee (to be composed of the three military Surgeons General; current membership includes: **Lieutenant General James B. Peake, Surgeon General of the Army**; **Vice Admiral Michael L. Cowan, Surgeon General of the Navy**; and, **Lieutenant General Paul K. Carlton, Jr., Surgeon General of the Air Force**) to provide management oversight for the University. As outlined in DoD Directive 5105.45, the USU President reports through the Executive Committee to the ASD/HA. The Executive Committee, chaired by **Lieutenant General Paul K. Carlton, Jr.**, conducts quarterly meetings which focus on important academic and administrative issues at the University. The USU Executive Committee and the USU Board of Regents have developed a close working relationship in a shared effort to enhance the academic and administrative programs at the University (a copy of the current Charter for the USU Executive Committee dated December 18, 2000, is at Appendix A).

As the Executive Agent, the Navy Surgeon General's Office provides oversight for the University's budgeting and programming activities. The DoD Directive further clarifies that the USU funding and personnel requirements will not be offset against the Navy Surgeon General's budget or work-year allocations; USU funding remains within the Defense Health Program. Section 7.2.1 of Directive 5105.45 also directs that USU civilian personnel authorizations will be under the purview of the DoD Executive Agent (Navy) and that USU civilian employees should be moved from OSD and carried on the rolls of the Department of the Navy. The USU civilian employees officially converted from OSD to Navy employees with the changing of the University's Subelement and Unit Identification Code at the end of Fiscal Year 1999. All official reporting documents will reflect this change (following the implementation of the Modern Defense Civilian Personnel Data System (MDCPDS) during August of 2001, both the USU government service/wage grade (GS/WG) and the USU administratively determined (AD) employees must be manually reported pending the revision of computer software scheduled for October of 2002). It was agreed that the Human Resource Services Center (HRSC) of Washington Headquarters Services (WHS) would continue to service the University for its personnel requirements; upon completion of all software requirements, a determination will be made on the eventual movement to Navy for personnel services and payroll. An inclusive review of the USU personnel instructions for compliance with the Navy personnel instructions was completed by USU during 2000; and, a Navy-conducted review and evaluation of the USU Civilian Human Resources Directorate was conducted on January 14-15, 2002. The Navy review team found that the USU Civilian Human Resources Directorate was "in compliance with the self-assessment requirements of SECNAV Instruction 12273.1 of March 16, 1999," with "no corrective actions required."

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A Strengthened Relationship Between USU and DoD. The evolving relationship between the USU and DoD from 1991 through 2001 has proven beneficial to the University. This new relationship has clarified and strengthened the position of the University within the entire DoD structure. The expansion of the oversight role of the Executive Committee (the three military Surgeons General) over USU has proven to be quite positive in terms of strategically identifying the ever-changing requirements of the MHS and evaluating how USU is currently meeting the needs of its primary customers, the Surgeons General. One example of the successful relationship of USU with the Surgeons General and OSD was evidenced by the presentation of the Joint Meritorious Unit Award by **the Honorable William S. Cohen, the Secretary of Defense,** to the University on December 11, 2000. In addition, on March 22, 2001, **the Honorable Donald**

Rumsfeld, the current Secretary of Defense, wrote the following to the Chair of the USU Board of Regents: **"The Department takes great pride in the fact that the USUHS graduates have become the backbone for our Military Health System. The training they receive in combat and peacetime medicine is essential to providing superior force health protection, and improving the quality of life for our service members, retirees, and families. All of us in the Office of the Secretary of Defense place great emphasis on the retention of quality physicians in the military. The USUHS ensures those goals are met. I look forward to continued excellence from the University."**

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USU BOARD OF REGENTS.

Our University's major strength continues to be the graduation of medical officers dedicated to long-term service. Currently in the Armed Forces, 90 percent of all of your USU graduates continue to practice military medicine. Today, one in five military physicians are our graduates and a disproportionately high number have attained leadership positions. And, two graduates attained flag rank last year. This combination of retention and leadership is the primary objective that our University was designed to achieve - long-term military medical leadership. Needless to say, we are intensely proud of the academic record achieved by our students and faculty and are dedicated to maintaining the highest possible standards for our Institution. In the academic realm, accreditation is the lifeblood of a university and we are pleased to report that our University has attained the highest possible assessment from the national accreditation bodies that evaluate our Institution.

- USU Board of Regents Annual Report to the Secretary of Defense, dated June 30, 2001.

Membership of the Board of Regents. The USU Board of Regents (BOR) is an advisory committee governed by the Federal Advisory Committee Act, the General Services Administration Final Rule (41 C.F.R. Part 101-6), and Department of Defense Directive 5105.45. The nine members of the Board are distinguished academics, educators, health care providers and public servants; they are Presidential appointees confirmed by the United States Senate: **the Honorable Everett Alvarez, Jr., J.D., Chair**; **the Honorable Robert E. Anderson, M.D., Vice Chair**; **the Honorable Lonnie R. Bristow, M.D.**; **the Honorable John E. Connolly, M.D.**; **the Honorable Ikram U. Khan, M.D.**; and, **the Honorable W. Douglas Skelton, M.D.**. Three remaining member positions are currently vacant.

Recently Appointed Chair. **The Honorable Everett Alvarez, Jr., J.D.**, member of the USU BOR, was designated by the **President of the United States George W. Bush** to be Chair of the Board of Regents; he assumed that position in November of 2001. First appointed to the USU BOR in 1988, Mr. Alvarez has served continuously to the present; he was previously designated and served as the Chair of the BOR from 1992 to 1996. Following his retirement from the U.S. Navy in 1980, with numerous decorations reflecting his nationally recognized service in Vietnam, Mr. Alvarez occupied several executive positions within the Federal Government. He served as Deputy Director of the Peace Corps from 1981 to 1982, and as the Deputy Administrator of the Department of Veterans' Affairs from 1982 to 1986. In 1987, Mr. Alvarez formed his own consulting company, CONWAL Incorporated. Currently, he is also a member of the President's Task Force to Improve Health Care Delivery to Our Nation's Veterans. **The Honorable Lonnie R. Bristow, M.D.**, former Chair, remains on the BOR as a member.

Ex Officio Members of the Board. In addition to the nine White House appointed members, the Board also has six ex officio members. These include 1) the Assistant Secretary of Defense for Health Affairs, **the Honorable William Winkenwerder, Jr., M.D. M.B.A.,**; 2) the Surgeon General (Acting) of the United States, **Rear Admiral Kenneth P. Moritsugu, M.D., United States Public Health Service**;

3) the Surgeon General of the Army, **Lieutenant General James B. Peake**; 4) the Surgeon General of the Navy, **Vice Admiral Michael L. Cowan**; 5) the Surgeon General of the Air Force, **Lieutenant General Paul K. Carlton, Jr.**; and, 6) the President of USU, **James A. Zimble, M.D.**, who serves as a non-voting member.

There are eight advisors to the Board: 1) the Dean, School of Medicine (SOM); 2) the Dean, Graduate School of Nursing (GSN); 3 - 6) the Commanders of the Walter Reed Army Medical Center, the National Naval Medical Center, the Malcolm Grow Air Force Medical Center, and the Wilford Hall Air Force Medical Center; 7) the Director of the Defense Medical Readiness Training Institute in San Antonio, Texas; and, 8) the former Assistant Commandant of the Marine Corps, **General Thomas Morgan**, United States Marine Corps (Retired) who continues to serve as the military advisor to the Board.

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The Board's Significant Role in Academic Affairs. The BOR has continuously played a prominent role in academic affairs at the University, to include the final review of candidates for the USU President prior to the Secretary of Defense's selection.

University Presidents:

Anthony R. Curreri, M.D., was appointed by **President Nixon** in 1974 and retired in 1976;

The Honorable David Packard, Acting President, served from November 1976 until May 29, 1981;

Jay P. Sanford, M.D., served from May 1981 through 1990; and,

James A. Zimble, M.D., has served since July 1991 to the present.

The BOR also reviews the final selections for the Deans of the SOM and GSN prior to their selection by the USU President:

School of Medicine Deans:

Jay P. Sanford, M.D., was appointed as the first Dean, SOM, in May 1975 and served through 1990;

Harry C. Holloway, M.D. served as the Deputy Dean from 1990 through June 1992;

Nancy E. Gary, M.D. was appointed as Dean on June 28, 1992, and served through mid-1995; and,

Val G. Hemming, M.D. was appointed as Interim Dean on July 2, 1995, and has served as Dean from May 3, 1996 to present.

Graduate School of Nursing Dean:

Faye G. Abdellah, Ed.D., Sc.D., RN, served as Acting Dean following the establishment of the GSN in 1993; and was selected as Founding Dean, GSN, serving from May 17, 1996, to the present.

Faculty appointments, promotions and organization, awarding of degrees, curriculum design and implementation, academic requirements for admission and graduation, and related matters vital to the academic well-being of the University are all included in the definition of "academic affairs" as provided by DoD 5105.45. The Directive clarifies it is DoD policy that **"...consistent with the performance of the DoD mission and with established practices covering academic independence and integrity in the fields of medical and health sciences education, the Department of Defense recognizes the unique role of the USU Board of Regents in advising the Secretary of Defense. The Assistant Secretary of Defense for Health Affairs, the USU Executive Committee, and the President of the USU will be guided by the advice of the USU Board of Regents on academic affairs."**

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The Board's Mission and Responsibilities. The Board's principal mission is to assure compliance with the University's accreditation authorities. The Regents approve academic titles, as appropriate, for military and civilian members of the faculty. Additionally, upon the recommendation of the University's faculty and Deans, the Regents approve the granting of appropriate academic degrees to successful candidates. The BOR recommends the establishment of postdoctoral, postgraduate and technological institutes, and programs in continuing medical education for military members of the health professions; and, the Regents also recommend reciprocal education and research programs with foreign military medical schools. Additionally, the BOR is significantly involved with the University's strategic planning process. On April 4, 1999, the BOR's Charter, which outlines the mission, membership, duties and responsibilities of the BOR, was revised and approved by the Office of the Secretary of Defense (OSD). The most current edition of the BOR's Charter is dated April 4, 2001. In addition, on February 6, 2001, the BOR Bylaws were updated and approved. (Copies of BOR Charter and Bylaws are at Appendix A.)

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The Board's Fifth Report to the Secretary of Defense. In the BOR's fifth annual report to the Secretary of Defense, the Regents listed numerous examples from among the University's many accomplishments during 2001; some of those accomplishments are described below.

USU Graduates Continue as Major Strength. The University's major strength continues to be the graduation of its 3,101 uniformed physician officers and 157 advanced practice nurses (totals effective as of April 2002) who ensure continuity and leadership for the MHS; the 2,465 USU physicians on active duty in the Army, Navy and Air Force currently represent twenty-one percent of the 11,833 physicians on active duty in the Armed Forces (in addition, 96 USU SOM graduates continue on active duty in the United States Public Health Service). The overall retention rate for USU SOM graduates from its first graduating class in 1980 to present is 85 percent; of the USU SOM alumni who have completed their residency training, approximately one out of every two USU graduates holds an operational or leadership position. Thus, the combination of the USU Alumni's career service, unique expertise, and leadership skills validates the primary objective for the establishment of USU - continuity and leadership for the MHS.

USU Maintains Full Accreditation from Fourteen Accrediting Organizations. The University continues to receive full accreditation from its fourteen accrediting entities. Following the submission of a comprehensive self-study, the Graduate School of Nursing (GSN) was visited by a National League for Nursing Accrediting Commission (NLNAC) site team. The visit took place from October 30 through November 1, 2001; since that time, the GSN has received final notification from the NLNAC that full accreditation has been granted to the GSN for the maximum term of eight years. The NLNAC's final report included testimony from the Federal Nursing Chiefs: "We are excited to see the quality of the students who graduate from this program...they are exceptional leaders. We are directly involved in helping the School understand the type of skills graduates need and find them very responsive to our suggestions." The NLNAC rationale for its provision of full accreditation was based on the fact that the "Uniformed Services University of the Health Sciences Graduate School of Nursing has met and exceeds all criteria for continuing accreditation. This program provides an outstanding model for preparing advanced practice nurses for military service and care of patients in crises and disaster situations. This program is on the cutting edge of effectively incorporating advanced technology into the curriculum and instruction process to produce a highly competent practitioner. This program can serve an a model to advance nursing education, practice and scholarship as nursing moves into care of the global community."

USU Achievements in Information Technology. Significant accomplishments have been achieved in the area of information technology: the redesign, replacement, and improved management of the computer network; a six-fold increase in Internet communications capabilities and a new dial-up capability for off-site users; the implementation of a program utilizing hand-held computers for communication with students on and off the campus, and the automated collection of educational data on student educational experiences; the establishment of an enterprise database and implementation of the first phase of a new computerized system for student applications, selection, and record maintenance; and, the provision by the USU Learning Resource Center (LRC) of 90 full-text books and over 5,000 journal titles; all of which are available on-line, and in full-text, to assist its users (faculty, staff, students, and alumni); these LRC capabilities have now been extended to a number of DoD medical and research facilities.

USU Institutional Review Board Obtains Federal-Wide Assurance of Compliance from the Department of Health and Human Services. The USU Program for the Protection of Human Participants in Research and the USU Institutional Review Board (IRB) jointly ensure the protection of human volunteers for research for both the University and its affiliates. The Programs's administrative staff, which functions as a part of the USU Office of Research, reviews each protocol conducted at the University to ensure compliance with all policies and regulations of DoD and other Federal organizations. During 2001, the IRB reviewed and approved: 211 initial proposals for human-subject research; 120 amendments to protocols already underway; and, 119 annual or semiannual reviews of previously approved projects. Also During 2001, in addition to the Assurance of Compliance previously received from DoD, USU obtained Federal-Wide Assurance from the Department of Health and Human Services. A separate IRB for the United States Military Cancer Institute was formally approved at a signing ceremony on January 14, 2002. Attending the ceremony were the President of USU, the Commander of the National Naval Medical Center, and the Commanding Officer of the Malcolm Grow Medical Center. The newly established Military Cancer Institute IRB will draw its members from these three institutions and will ensure compliance with Federal regulations and accepted ethical standards of scientific conduct.

Two University Programs Are Added to USU's Financial Base. Funding for the National Capital Area Medical Simulation Center, the USU's cutting-edge teaching initiative, and the USU Military Training Network, described in Section VI of this report, has been included in the University's financial base. Through

coordination with, and the support of, the USU Executive Committee, these two USU programs are now permanently resourced as part of the DoD budget process.

The GSN's Imaginative and Successful Partnership with the Department of Veterans' Affairs. During 2001, the USU Graduate School of Nursing (GSN) continued its imaginative and highly successful partnership with the Department of Veterans' Affairs (VA) to provide a twenty-month distance learning program for currently employed, masters-prepared VA nurses to complete a certificate program as adult nurse practitioners. The initial class of students were located at eight VA medical centers across the United States. In May of 1999, the first class of 26 students graduated in a virtual advanced graduation ceremony; a second class of students, located at ten VA medical centers, graduated in May of 2001 for a total of 60 graduates; a third class is currently underway. The program is cost-effective because it utilizes existing technology throughout the VA medical centers and permits the VA employees to maintain their positions at the medical centers while they study to earn an advanced certificate in a critically required specialty.

USU Continues to Serve as the Academic Health Center for the MHS. USU also serves as an Academic Health Center for its 2,647 off-campus, uniformed faculty located throughout the MHS. During 2001, the University sponsored conferences and seminars significant to military medicine; some examples include: The 15th Conference on Military Medicine, A Challenge to Readiness: Maintaining Currency in Military Medical Education; Planning for Biological Events: Responses to Terrorism and Infectious Disease Outbreaks; Pre-Conference Seminar at the 59th Annual Conference of the United States - Mexico Border Health Association; and, the 5th International Conference on Tactical Emergency Medical Support, "TEMS 2001."

All of these accomplishments are described in detail in Sections I, II, and III of this report.

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STRATEGIC PLANNING

A Perpetual Work-In-Progress. The USU Strategic Plan has been continuously evolving to reflect the changing requirements of the Strategic Plan of the Military Health System, which, in turn, is also linked with the Strategic Plans of the University's primary customers, the Surgeons General of the Army, Navy, and Air Force.

All Proposals for Funding Must Tie Into the USU Strategic Plan. Beginning with the USU Strategic Planning Process initiated during 1991, an increasingly systematic approach has been developed for setting the University's priorities and allocating resources based upon relevance to the USU Strategic Plan. USU activity leaders must show a direct relationship with the overall USU Strategic Plan when submitting their requests for future budgets. Thus, a formal process has evolved for identifying program needs and for submitting increased budget requests. Involvement of USU administration, faculty, and staff at both the formal and informal levels of the decision-making process assists in the equitable allocation of resources throughout the University's wide range of activities. The USU Strategic Plan is also used to develop the University's annual Program Objective Memorandum (POM) submission. The POM request, covering a five to six year timeframe, is submitted to the Department of Defense, through the Office of the Navy Surgeon General, in order to gain the necessary funds for the USU budget.

Recent Strategic Planning Initiatives. During 1998, the University updated the basic objectives under each of the goals of its Strategic Plan. Then, during 1999 through 2000, metrics or performance measurements were established and monitored for each objective. Next, in order to ensure that the USU Strategic Plan was accurately reflecting the evolving requirements of the MHS, on April 25-27, 2001, the senior staff of USU, representatives from the teaching hospitals, the Chair of the BOR, and senior staff from the offices of the Surgeons General met to participate in a three-day strategic planning session. The purpose of the retreat was to review and update the goals and objectives of the USU Strategic Plan so that they appropriately reflect the current requirements of the MHS. The session was facilitated by two officers from the Navy Medicine Center for Organization Development. Reference materials included the Service Strategic Plans, the USU Strategic Plan, and survey results as they were recorded during the initial group discussions.

A Significant Review and Evaluation of Goals and Objectives. Through group interaction, the attendees of the 2001 retreat reviewed USU's internal and external customers and stakeholders. Then, the concerns of those stakeholders were identified, discussed, and weighted during an analysis of the strengths, weaknesses, opportunities, and challenges existing within USU's current environment. Following those discussions, seven strategic issues were identified: marketing; resources; people; USU as a strong advocate for the MHS direct care mission; education/research/partnerships; strategic thinking; and, communication. Those seven strategic issues were carefully developed into the seven strategic goals of the current USU Strategic Plan. Next, 16 of the most significant objectives were prioritized for initial implementation and action. Some of the most critical objectives included: staff and faculty are satisfied and productive; military and civilian leadership recognize USU's role in military medicine and the preparation for operational missions; educational programs promote military medical readiness, public health, and force protection; the public understands the unique roles and values of USU; USU serves as a think tank to address new issues; USU is an active and valued participant in professional academic and military organizations; USU strongly advocates for the Direct Care Component of the MHS; tools are available and utilized for off-site communication; and, a robust array of communication mechanisms is maintained.

Learning to Care for Those in Harm's Way. Goal Champions were appointed to oversee the development and implementation of the actions required to accomplish the objectives and ultimate realization of each goal. Finally, the attendees designated 11 Team Leaders to develop action plans for accomplishing one, or more, of the 16 prioritized objectives. At the conclusion of the 2001 strategic planning session, the current mission statement was reviewed to identify a shorter and more accurate reflection of the University's purpose and future; the attendees agreed on the following: Learning to Care for Those in Harm's Way. (A copy of the USU Strategic Plan is at Appendix B.)

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Progress Toward Achieving the University's Seven Strategic Goals in 2001. As the strategic planning process evolved during 2001, the USU community incorporated its newly revised plan (which now includes seven strategic goals and 41 objectives) into its on-going efforts to meet its mission and respond to the requirements of the MHS. The following are examples of selected issues and accomplishments reported during 2001 which respond to the University's revised strategic goals (additional information on each of the listed accomplishments is also provided throughout the 2001 Edition of the USU Journal).

GOAL 1: We will enhance the reputation of USU as a premier health sciences academic institution with a unique global and military perspective.

USU SOM Faculty Participate at Conference with Premier Medical Schools. USU SOM faculty were selected to join faculty from ten premier medical schools: 1) Baylor College of Medicine; 2) UCLA School of Medicine; 3) University of California, San Francisco; 4) Duke University School of Medicine; 5) Harvard Medical School; 6) University of Iowa; 7) Mayo Medical School; 8) MCP Hahnemann University School of Medicine; 9) Mount Sinai School of Medicine; and, 10) the University of Rochester School of Medicine) at the Millennium Conference on the Clinical Education of Medical Students co-sponsored by the Shapiro Institute for Education and Research and the Association of American Medical Colleges (AAMC). In making the selection of USU as a conference participant, the sponsors reviewed a spectrum of critical themes in clinical education, including faculty development and reward, assessment of student performance, the fourth-year curriculum, and the use of technology to enhance clinical teaching. The selection committee was impressed by: USU's extensive and innovative uses of technology in the training and evaluation of not only medical students, but also postgraduate trainees and nursing students; the University's commitment to using its educational system as a laboratory for measuring outcomes for curricular revision and for educational interventions; and, its understanding of the importance of recognizing and rewarding faculty who focus their academic endeavors on medical education. USU's on-going efforts and plans for the near future contributed to the work completed at the Millennium Conference which was held from April 28 through May 1, 2001. The focus of the conference was on the future of medical education and the development of strategies for improving the quality of the clinical education of medical students; strategies that could guide the conference participants in their efforts to implement changes in the clinical curricula at their individual schools.

Common themes from the conference included: **What to Teach -** Conference participants uniformly agreed it is critical that the clinical and basic sciences be integrated, along with longitudinal themes and cross-disciplinary topics, across the 4-year curriculum. Graduation competencies should be

established, and evaluation must be linked to prescribed competencies. To ensure that objectives are being met by each student, competency-based assessments must be conducted at regular intervals (e.g., at the end of Year I, at the transition between the preclinical and the clinical curriculum, and at the end of Year III). In addition, individual learning requirements for students should be developed at the end of Year II based on a comprehensive assessment; **How to Teach -** Centralizing the administration of the clinical curriculum within the medical school emerged as a strong consensus. Participants also agreed that clinical experiences should begin early, in the latter months of Year II. The traditional clerkships should be modified to facilitate a shift from team-centered learning to patient-centered learning for students. Clinical learning modules with core faculty should be created. Mentoring and opportunities for longitudinal faculty/student relationships should be expanded throughout the clinical curriculum. The final year of medical school should be revised to include advanced experiences that build on the scientific clinical foundation begun in the earlier years of medical school and prepare students for the first year of post-graduate training. A course focused on the transition to internship might include topics ranging from managing common emergencies to teaching skills; and, **Who Teaches -** Perhaps the strongest consensus that emerged from the conference is the need to establish organized structures for supporting faculty who teach in the form of core faculties, communities of scholars, or academies of medical education. The role of clerkship directors must be enhanced, and expectations for clerkship directors must be defined. Clerkship directors should also: engage in medical education research; participate in formal evaluation sessions; assist in faculty development; and, be provided the time and resources to accomplish these tasks. The education faculty should be empowered as change agents. They should have opportunities for leadership development and faculty development focused on education. Internal grants could provide protected time to pursue research questions with defined outcomes that can be published. Strategies for dynamic curricular revision must be developed. Think tanks should be established to develop a long-term vision for the curriculum and provide feedback to curriculum committees. Lastly, mechanisms for recognizing and rewarding teachers will be critical to ensure excellence in medical education in the new Century. Education faculty must be rewarded, especially academically, but also financially. Mission-based management and budgeting for medical education should be instituted and endowments supporting teaching should also be raised. Funding for education research from internal as well as external sources should be made available for faculty to pursue academic interests in medical education.

The participants of the Millennium Conference developed these broad recommendations in hopes that they will benefit the medical education community at large, in addition to, the school-specific plans presented for discussion which may be executed at the individual schools of the participants. USU representatives included: **CAPT Richard Hawkins, MC, USN, Assistant Dean, Simulation Education**, **CAPT Joseph Loprieato, MC, USN, SOM Department of Pediatrics**, **John Pierce, M.D., SOM Department of Pediatrics**, and **Louis Pangaro, M.D., SOM Department of Medicine**.

Graduate School of Nursing Earns Continued Full Accreditation. Following the submission of an inclusive, 191 page Self-Study by the GSN faculty and staff, the National League for Nursing Accrediting Commission (NLNAC) conducted a site visit and review of the GSN programs on October 30 through November 1, 2001. In January of 2001, the USU was notified that accreditation had been granted by the NLN for the maximum term of eight years; the final NLN Program Evaluation Report provided the following as exceptional strengths: **"The congruence of the mission of the GSN within the Uniformed Services University of the Health Sciences is unique. This program prepares graduates to function immediately after completing the program as Advanced Practice Nurses in their respective Branch of the Services. Dr. Abdellah's exemplary leadership and expertise in numerous areas of nursing and public health provide an exceptional base of support for the creation of this unique and very high quality program... and serve to elevate the status of this program in the University and the national and**

international nursing community. Her list of awards and the positions of leadership she has held support the development of the collaborative relationships that are key to the ongoing interdisciplinary development of the School." During September through early October of 2001, an additional, 262 page Self-Study was also completed by the GSN faculty and staff for the Commission on Collegiate Nursing Education (CCNE). The CCNE site visit took place in November of 2001. Preliminary reports indicated that full accreditation would be granted to the GSN when the CCNE formally met on the granting of accreditation during the Spring of 2002; following that meeting, the University was notified that maximum accreditation had been granted to the GSN through June of 2012.

Academic Center for Military Medicine. During 2001, the University continued to serve as the Academic Center for Military Medicine for the 2,647 active duty, off-campus USU faculty who are located throughout the MHS. Through its continuing medical education programs and academic centers, the University presented military-relevant conferences and continued its collaborative efforts for the Uniformed Services. Some examples are provided below.

1) The Fifteenth Conference on Military Medicine, "A Challenge to Readiness: Maintaining Currency in Military Medical Education," was held on June 4-7, 2001. The attendees focused on predicting the changes that will impact military medical practice over the next twenty to thirty years and providing recommendations regarding the changes needed in military health care education to prepare today's uniformed medical students to practice in the future. Experts in military and contingency medicine contributed their expertise, experience, knowledge, opinions, predictions and, most importantly, their recommendations for the planning and implementation of future military medical education and training. There were four principal topic areas: a) new technologies, both medical and non-medical, that are likely to influence the practice of military medicine over the next 20 to 30 years; b) changes in the Services' missions and doctrines that will impact future health care delivery and the practice of military medicine; c) emerging threats, new emerging, or re-emerging, diseases, and new weapons or new weapon technologies; and, d) changes in ethics, mores, and societal expectations that will impact the future practice of military medicine. The Sixteenth Conference on Military Medicine is planned for mid-2002; the attendees will help to determine which metrics should be used to measure whether the changes proposed during the preceding conference have achieved their desired effect.

2) The Center for the Study of Traumatic Stress of the USU SOM Department of Psychiatry organized and sponsored a three-day conference with the Center for Mental Health Services, Substance Abuse and Mental Health Services Administration, Department of Health and Human Services, "Planning for Biological Events: Responses to Terrorism and Infectious Disease Outbreaks," on October 19-21, 2001. Attendees included internationally known scientists, public health and mental health leaders from the state and local levels, and representatives from the state executive branches. The conference was organized to: examine how communities perceive their needs for behavioral and mental health response preparedness in anticipation of bioterrorism and infectious disease outbreaks in the wake of training provided by the Departments of Defense and Justice; develop recommendations for behaviorally and psychologically informed interventions to maintain or restore community function; provide recommendations on health communication and risk appraisal to state and local community leaders and others in order to respond more effectively to the mental health consequences of terrorist attacks; and, develop recommendations for education, training, and resource requirements to assist state and local officials to prepare for the mental health aspects of infectious disease outbreaks.

3) The USU Casualty Care Research Center (CCRC) hosted the Fifth International Conference on Tactical Emergency Medical Support, "TEMS 2002," on June 8-10, 2001, in Arlington, Virginia.

The conference received full attendance and positive responses from all attendees. The Keynote Address was presented by **Colonel David Mitchell, Superintendent of the Maryland State Police**. There was also a presentation on the development of a Tactical Medicine Program in Littleton, Colorado. This program was established following the shootings at the Columbine High School in 1999.

4) The USU Center for Disaster and Humanitarian Assistance Medicine (CDHAM) of the USU Department of Military and Emergency Medicine, hosted a three-day, pre-conference symposium for community emergency first-responders, civil authorities, border health workers, and military personnel of the United States and Mexican Armed Forces as part of the 59th Annual Conference of the United States - Mexico Border Health Association (USMBHA). The pre-conference focused on the fact that while global medical communities have a growing understanding, capacity, and capability to provide life-saving care following natural disasters, the unique challenges of man-made disasters, which range from accidents to terrorism, and from hazardous materials exposures to emerging infections, pose new challenges to science, medicine, and international partnerships. Over 75 participants shared experiences and lessons learned during the symposium in order to gain an understanding of "first principles" that may be common across events and cultures.

GOAL 2: We will anticipate changes in society, medicine and the military to meet the academic and unique needs of health care delivery in the MHS.

The National Capital Area Medical Simulation Center. The National Capital Area Medical Simulation Center, a collaborative project between USU and the Surgeons General, officially began operations on April 21, 2000. The Simulation Center, located at the Walter Reed Army Medical Center annex in Forest Glen, Maryland, uses virtual reality technology, life-like mannequins and actor "patients" to support not only the USU programs but the other military medical centers in the Washington, D.C. area. The USU Simulation Center is unique among the limited simulation centers currently found at civilian medical schools because five state-of-the-art components are included under one roof: 1) standardized patients (patient "actors"); 2) multi-media, interactive, clinical case presentations on LAN or web-based CD-ROMS; 3) virtual reality software applications; 4) medical simulators (computerized mannequin simulators); and, 5) video-teleconferencing/distance education. The importance of simulation technologies, particularly in training, is that the simulators allow "virtual" training before the actual provision of medical treatment; thus, students are able to develop clinical skills without the risk of harming a patient. The Simulation Center also generates cost-avoidance for the MHS through the provision of training and distance learning for SOM and GSN students, graduate medical education, medical readiness, and research.

The recent changes in the military health care environment such as the redistribution of resources, military down-sizing, the shift to outpatient from inpatient care, and privatization issues with TRICARE have all had an impact on medical education. Most of the clinical faculty at the military "teaching hospitals" are requested to accept increased clinical, operational, and administrative responsibilities at their respective clinical sites as well as multiple academic tasks. This directly impacts the faculty's availability for the instruction of medical students. During 1999, the Simulation Center served as the site for the Introduction to Clinical Medicine I, a course that teaches medical interviewing skills. In 2000, the Simulation Center proved to be essential for USU to support the Introduction to Clinical Medicine III Course; and, during 2001, USU continued to focus on current clerkship issues, to include careful analyses of current trends and the Simulation Center's future role in addressing related areas of concern.

During the past 22 months, the Simulation Center has supported 54 educational activities: 16 School of Medicine; 12 Graduate School of Nursing; 14 Graduate Medical Education; 5 Medical Readiness; and, 7 Research Training activities. These educational activities, in turn, supported over 7,500 student encounters.

Hand-Held Computers for Students. By November of 2000, the USU SOM Biomedical Informatics Department was formally established and began the implementation of a Hand-Held Computer Program for the SOM students during 2001. Hand-held computers were provided by the University to the second year medical school class. These computers provided common paths of communication as School of Medicine (SOM) students entered their rotation cycles. Surveys have documented that the hand-held computers are a superb educational tool; the provision of these computers will be continued in 2002.

GOAL 3: We will optimize resources to efficiently and effectively implement USU core capabilities.

Optimization of USU Resources Generated $23.3 Million of Cost Avoidance for the MHS during 2001. Continuous accreditation by 14 accrediting entities has enabled USU to support and generate cost avoidance for the MHS through its multiple educational programs and activities. In addition to 3,258 USU Alumni (3,101 uniformed physician officers and 157 advanced practice nurses as of April 2002), the Office of the Secretary of Defense (OSD) has officially recognized the many cost-effective products of USU: (**Accredited Programs:** i.e., Graduate Education; Graduate Medical Education; Continuing Education for Health Professionals; the VA/DoD Distance Learning Program; and, the Military Training Network; **Centers of Unique Expertise for:** i.e., the Study of Traumatic Stress; Preventive Medicine and Public Health; Casualty Care Research; Disaster and Humanitarian Assistance Medicine; Prostate Disease Research; Pediatric Molecular Medicine; and, Space Medicine; and, **Institutes for:** Armed Forces Radiobiology Research and Cancer Research).

University Adapts Business Planning Tools. In response to strategic planning efforts, a need was identified for business planning tools to assist the USU family in planning for, and requesting, resources for new initiatives. To meet this goal, two levels of business planning aids have been developed. The first is a Business Planning Checklist to be used with most new initiatives which will assist in reviewing the total impact on people, facilities, and resources. The checklist ensures that the requestor has considered the full range of requirements for a new initiative. For example, items on the checklist include installation and maintenance costs, as well as purchase costs for new equipment, new employee salary and benefits packages, office space, and, communication tools. A more comprehensive and detailed Business Planning Form has also been developed for major projects. Both tools are currently in the process of being made electronically available to users.

Financial Management Activities. Due to an aggressive Travel Card Program implemented by the USU Financial Management Division Travel Pay Office, the USU Travel Card Manager, and the USU senior management, the University continued to be recognized by the DoD throughout 2001 for consistently maintaining the lowest travel card delinquency rate in the DoD. Beginning during the past Fiscal Year, USU also entered into a partnership with the Navy Bureau of Medicine and Surgery (BUMED) to jointly manage the funding levels of USU's procurement account in order to maximize benefits for both USU and the DHP. Under this agreement, USU is responsible for executing the University's procurement program and requesting and justifying any long-term capital equipment requirements; BUMED assists in the management of the appropriation process, facilitating the matching of funds with the timing of procurement actions. Also during 2001, there was new emphasis on shared problem solving of budgetary issues with all USU activity heads.

Grants Management Activities. During 2000, the University established the Grants Management Office and Grants Officer Position to provide administrative management services in support of the University's research community for grant or cooperative agreements; this included providing fiscal management and guidance to grant recipients and investigators. During 2001, the Grants Management Office awarded seven new grant agreements worth more than $6,700,000; and, it completed 125 grant modifications. Currently, there are 110 active USU awarded grant agreements ranging from $5,000 to $48,000,000 managed by the Grants Office; the total award value is approximately $253,000,000. The University has 75 principal investigators conducting research on projects awarded to some 12 grant recipients. Currently, there are 33 agencies providing funding support. The USU Grants Office also provides oversight support for the TriService Nursing Research Program which has more than 70 grants.

Resource Management Information Activities. During 2001, the Resource Management Information Office developed, maintained and administered the University's resource management information systems and worked on the following special initiatives: 1) the establishment of the Resource Management Information System Search Committee which was appointed to find a suitable replacement for the University's principal resource management information system, the College and University Financial System (CUFS). The committee must effectively evaluate the available options for the appropriate system and, following its selection, propose a recommended implementation plan; 2) a web page was developed for the Contracting Directorate to help disseminate guidance to the University and vendor communities on various acquisition issues such as policies and regulations, solicitations, proposals, the Government Purchase Card, and other procurement guidelines; and, 3) due to a Defense Finance and Accounting Service (DFAS) realignment mandate, the disbursements (vendor pay) function was transferred from Omaha to the DFAS Center in Denver, Colorado; this transfer necessitated an extensive modification of the automated disbursement program in CUFS to accommodate the unique coding characteristics used at the Denver Center. All of these requirements were cost-effectively accomplished by USU staff.

GOAL 4: We will build a sustaining financial base.

Two Programs Are Added to the University's Financial Base. Permanent funding for the National Capital Area Medical Simulation Center and the USU Military Training Network has been incorporated into the University's financial base to support health professional education and training throughout the MHS. This was accommodated through the support and approval of the USU Executive Committee. During 2002, USU will focus on resource acquisition to build a sustaining financial base, and resource stewardship to effectively and efficiently support USU's core missions in teaching, research, service, and medical readiness.

USU Research Programs Increase Funding Levels. Growth in research funding at USU has continued to increase over the past few years. For example, in 1998, research funding granted to the USU researchers totalled some $44 million; by the end of 2001, research funding had increased significantly. Of note, funding from the National Institutes of Health has steadily increased ($7 million in 1998; $10 million in 2000; and, $16.4 million in 2001). During the past year, the USU Office of Research continued to establish baselines for research funding from both extramural and intramural sources in order to assess progress and growth potentials. In addition, research plans were developed which will allow USU investigators to request funding for multi-investigator grants from the National Institutes of Health.

The USU Office of Research (REA) provides service primarily to three communities: the University as an institution; USU faculty and student investigators; and, the more than 80 funding agencies which support research at the University. The Office of Research also oversees six multi-site, Congressionally-funded research programs whose Fiscal Year 2001 funding totaled $30,000,000: the TriService Nursing Research Program; the Center for Prostate Disease Research; the Defense Brain and Head Injury Program; the Coronary Artery Disease Reversal Program; the Clinical Breast Care Program; and, the new Post-Polio Research Program. All together, these programs support approximately 100 individual research projects conducted at USU and elsewhere.

Extramurally funded research at USU included 330 projects supported by Federal agencies such as the National Institutes of Health, the National Science Foundation, the Department of Energy, the U.S. Army Medical Research and Material Command, and the Office of Navy Research.

GOAL 5: We will optimize our role in military and federal medical education and research.

USU Research Studies Critical Issues for the Military. In 2001, the USU intramural program consisted of 80 militarily relevant protocols, 61 clinical research awards, and eight projects in areas of educational research. Standard awards by USU for militarily relevant research were typically 90 percent of the applicant's budget request; clinical research projects were usually supported by the University at 80 percent. A wide array of research protocols at USU investigate specific disease threats faced by the Armed Forces during peacetime and deployment. These research projects support the military mission by advancing the understanding of both the transmission and the internal mechanisms of a spectrum of pernicious and/or common diseases that may be faced by warfighters. These protocols are expected to provide important applications in support of the growing requirements for Homeland Defense. The knowledge gleaned by USU researchers should open new avenues to better control, diagnose, and provide treatment when responding to both natural and man-made biological threats.

USU studies also support the critical requirements of combat casualty care by: exploring the pain-control mechanisms which underlie established treatments; providing the groundwork for effective strategies to limit nerve damage and encourage nerve regeneration; and, identifying life-threatening complications caused by the combination of exertion and injury under combat conditions. In the area of operational medicine, USU researchers are analyzing the ability to manipulate the physiological mechanisms of stress and immunity, human sleep and seasonal cycles, and the neurological changes necessary to short- and long-term memory. The goal of such research is to enable the Military Health System to: allow deployed forces to stay awake longer with less impact on performance; develop better strategies for enhancing and preserving memory; ultimately prevent and treat neuropsychotic illnesses such as depression and post traumatic stress disorder; and, assist deployed troops and their families to better prepare for, and contend with, the significant stressors associated with military operations.

USU Continues the Development of Exportable Packages for Distance Learning for the Medical Response to Weapons of Mass Destruction. During Hearings held by the House Committee on Veterans' Affairs, Subcommittee on Oversight and Investigation (November 14, 2001), and the House Committee on Government Reform, Subcommittee on National Security (November 7, 2001), the President of the Association of American Medical Colleges; the Chair-Elect of the American Medical Association Board of Trustees; the Deputy Under Secretary for Health, Department of Veterans' Affairs; and, the Assistant Secretary of

Defense for Health Affairs all testified that "USUHS, in providing a cadre of career physicians, has developed curricula to enable its students (medical, graduate medical education (GME), advanced practice nursing, graduate education, and continuing health professional education) to prepare thoroughly to deal with the medical aspects of chemical, biological, radiological, nuclear terrorism and has developed exportable packages for distance learning in those arenas as well as in disaster medicine in the broadest sense."

GOAL 6: We will create a powerful, committed and energized University family.

USU Community Sessions. During the past year, the USU Office of Equal Employment Opportunity (EEO) continued to present USU Community Sessions to reinforce both the understanding of, and the appreciation for, the cultural diversity which exists throughout the University. To celebrate the birthday of Dr. Martin Luther King Jr., on January 29, 2001, **Admiral David Satcher, the Surgeon General of the United States**, presented the Keynote Address to over 300 faculty, staff, and students from the USU community. Also, in response to the emotional stress following the events of September 11th, a USU Family Day Presentation, "Coping with the Effects of Terrorism," was held on October 18, 2001. **Michael Feuerstein, Ph.D., Professor, USU Department of Medical and Clinical Psychology**, reviewed five topic areas in a lecture room filled with members of the USU community: defining terrorist attacks and why they are so frightening; the reaction to such events; coping with the present; what has worked in assisting the community to cope with stress; and, the available sources of support and counseling. In addition, a USU Memorial Service for the Victims of September 11, 2001, was coordinated by the Office of the USU Brigade Chaplain. Also during 2001, the Offices of University Recruitment and Diversity Affairs (RDO), Student Affairs, EEO, Equal Opportunity (EO), the USU Brigade Commander, and the Civilian Human Resources Directorate collaborated to ensure: 1) the communication of equal opportunity principles throughout the University; 2) the timely sharing of information; and, 3) training in personal development, supervisory skills, and the appreciation of diverse cultures. In addition, the Women in Medicine and Science Group, sponsored by RDO, met monthly throughout 2001 to discuss issues affecting women in medicine.

USU Orientation Program. Since October of 2000, the USU Civilian Human Resources Directorate, with the assistance of the senior leadership of USU, has provided formal sessions of the USU Orientation Program to 137 new, civilian and uniformed members of the University community: 45 in 2000; and, 92 during two sessions held in 2001. The purpose of the program is to present the philosophy, goals, policies, and leadership principles of the University. Orientation packets with key facts and other selected information are provided for review and future reference. For example, in February of 2000, the SOM Office of Faculty Affairs issued a faculty handbook on the USU web which describes the organization and functions of the various components of the University; the handbook serves as a quick guide for the delegation of responsibilities at USU and where to seek information, guidance, or other faculty-related requirements; new faculty are introduced to the USU web site and encouraged to utilize the information. In addition, the USU Environmental Health and Occupational Safety (EHS) Department briefs the new employees on its initiatives to raise the safety consciousness of the USU researchers and the general community. The USU Orientation Program continues to successfully promote a positive experience for the new employees and also allows them to meet the senior management of USU. Similar sessions will continue during 2002.

Development and Recognition Programs. During 2001, extensive efforts were made to present opportunities for the personal development and recognition of the USU community: 1) the USU Institutional Animal Care and Use Committee and Laboratory Animal Management (LAM) continued to provide its self-developed Protocol Writing Workshop for USU investigators who utilize animals in research and education; 2) a renewed emphasis was placed by the Civilian Human Resources (CHR) Directorate on Individual Development Plans for the civilian workforce; the initial goal of ten percent participation was achieved during 2001; 3) CHR used 175 training vouchers and 60 on-line training subscriptions for computer-related training for the Microsoft Office Suite throughout 2001. Additionally, CHR processed 250 individual training requests and trained 163 USU employees during on-site classes; 4) the Department of Family Medicine, in coordination with the SOM Office of Faculty Affairs, offered numerous courses and seminars which strongly supported faculty development throughout the USU community; during 2001, more than 250 attendees from the USU faculty earned over 300 hours of continuing education credit; 5) to date, the University President has personally presented service awards to 80 USU civilian employees; during the same timeframe, the USU Brigade Office of Military Personnel approved and processed 118 awards for the uniformed members of USU; 6) under CHR coordination, 100 percent of all USU civilian employees (faculty, staff, and administration) received performance evaluations during 2001; and, 7) the University continued its sponsorship of both the USU Toastmasters (25 active members) and the USU Mentoring Programs (34 participants).

Provision of Formal and Informal Counseling. The USU Offices of Equal Employment Opportunity (EEO), Equal Opportunity (EO), Recruitment and Diversity Affairs (RDO), and Student Affairs (OSA) continued to provide formal and informal counseling throughout 2001. The EO Office did not have to provide formal counseling sessions to the uniformed members of USU during 2001; the EEO Office provided one formal and ten informal counseling sessions to the USU civilian staff during the past year; and, the Offices of RDO and OSA continuously provided counseling sessions to the USU uniformed students throughout 2001. The success of these counseling sessions is evidenced by the ever increasing appreciation and respect shared among the individual members of the University. Also, the EO representatives for the USU Brigade provided EO training for all uniformed members of the University during 2001; the training addressed diversity, acceptance of others, management of difficult situations, and the identification of harassment in both the work place and in the academic setting.

Recruitment Strategies. The on-going recruitment strategies implemented or maintained during 2001 by the Office of University Recruitment and Diversity Affairs (RDO), in coordination with the Offices of Student Affairs, University Affairs, Graduate Education, and the USU Brigade Commander, document the University's commitment to increase the matriculation of underrepresented minorities. Some of the major efforts during 2001 included: 1) the USU Liaison Program supported and coordinated USU Alumni visits to universities, colleges, recruitment fairs, Reserve Officer Training Corps (ROTC), and Junior ROTC units throughout 2001; 2) The Office of RDO ensured that the more than 6,000 packets of recruitment materials previously mailed to ROTC units, military bases (installations and hospital commanders, chief enlisted advisors and education offices), pre-medical advisors at the military service academies, and undergraduate institutions nationwide were replenished and updated as required. Additionally, written advertisements in various undergraduate marketing venues were produced; 3) the initiation of a joint venture between USU and the Health Professional Scholarship Program (HPSP) recruitment offices took place to enhance the numbers of qualified applicants for both USU and the HPSP Program; 4) the agreements in the Memorandum of Understanding between USU and the University of Maryland Eastern Shore (UMES), one of America's Historically Black Colleges and Universities, to allow UMES students and faculty members to

perform research in USU laboratories was also continued during the past year; 5) the use of the USU web page for electronic recruitment information increased during 2001; 6) a Military Medical Invitational Shadow Program was established through a Memorandum of Agreement between USU and Franklin and Marshall College (F&M) to allow prospective pre-medical students from F&M to participate in a shadowing program at the USU SOM and the local teaching hospitals; 7) numerous tour groups and visits to USU were conducted whenever requested throughout 2001. In addition, over the past ten years, the National Youth Leadership Forum (NYLF) has sponsored numerous visits to the University. During 2001, the NYLF Presidential Classroom Forum, consisting of 40 students, toured the University and received a moulage demonstration from the SOM Department of Military and Emergency Medicine; 8) the USU hosted over 1,000 students in the first-ever National Student Leadership Conference visit during the Summer of 2001; and, 9) the USU Preparatory Program, established in 1998 as a trial program, was modeled after current civilian post-baccalaureate programs while maintaining compliance with federal laws and restrictions and simulating service academy preparatory schools. The program's goal is to increase representation at USU of economically or educationally disadvantaged students and to include current active duty enlisted and/or uniformed officers. During the Fall of 2000, three students entered the program. To date, 100 percent of the students from this program have been accepted into the SOM. During the Spring of 2002, the first students will complete the Preparatory Program and will take the United States Medical Licensing Examination Part I; the resulting data will allow USU to further examine the program.

The Helping Hands Project. During 2001, through their participation in the USU Helping Hands Project, USU students (medical and advanced practice nursing) and physicians provided assistance to the poor and homeless at clinics in three Maryland communities: the KenGar First Baptist Church in Kensington; the Shepherds Table at the First Baptist Church of Silver Spring; and, the Adventist Community Center in Takoma Park. The USU students and participating faculty members of the USU SOM Department of Family Medicine became acquainted with available community resources and learned about the health care needs of their patients. The patients were treated for chronic problems such as hypertension, depression, arthritis, and diabetes. Depending upon the clinic, students saw from six to fifteen patients during their three-hour shifts. This on-going Project has provided USU students and faculty the opportunity to work with patients from diverse backgrounds who have unique life experiences.

GOAL 7: We will effectively communicate the right information to the right people at the right time.

Response on September 11, 2001. Within hours of the terrorist attacks in New York and at the Pentagon, the USU Center for the Study of Traumatic Stress provided: 1) immediate, on-going consultation to the hospitals, medical care planners and elected leaders of New York City, the State of New York's Response Management Team, the Pentagon's Response Planning Team, and Arlington Hospital (42 casualties were received from the Pentagon) on staff stress/interventions; 2) continuous manning for the Stress Support Office at the White House/Executive Office Building; 3) on-going provision of resources and information packets for the USNS COMFORT deployment teams for stress related to body handling, concern over families, and terrorist activities; 4) a Disaster Care Resources site on the USU Trauma Center Web Page; 5) following OSD coordination, immediate responses to requests for consultation and expertise from Newsweek, ABC News, The Washington Post, and, The New York Times; 6) information packets to the Body Recovery Teams in both New York and Washington, D.C.; and, 7) membership on the Secretary of Defense's 12 member Task Force, "RED NUFF."

The USU Casualty Care Research Center (CCRC) has also played a significant role since the terrorist attacks. CCRC staff members were among the first medical personnel to arrive at the Pentagon on September 11th. That morning, CCRC was providing its specialized emergency medical training to members of the United States Park Police when they heard the explosion at the Pentagon. Within moments, two CCRC providers were on board two Park Police helicopters headed for the Pentagon. The USU CCRC staff worked with on-site military and civilian personnel to set up a triage and treatment system. Minutes after their initial landing, CCRC staff were back on board a helicopter and treating two DoD civilians as they were transported to the hospital. In addition, the CCRC has served as a lifeline to many teams deployed to the New York World Trade Center during the aftermath of the attacks. Beginning on September 12th, CCRC staff were on "ground zero" for weeks providing on-going medical aid to rescue personnel. The CCRC staff has been providing assistance and consultation in the Washington D.C. area for continuity of government activities, in addition to, providing critical training to emergency medical responders across the Nation. The CCRC shares the unique experience and knowledge of its staff throughout its data-driven curriculum. It is a one-of-a-kind program in the DoD. **Mr. Joshua Vayer, Director of the USU CCRC**, has also been appointed by the USU President to serve as the Chair of the USU Homeland Defense Committee.

High-Speed Network Link to Internet-2. Through collaboration with the National Library of Medicine, an ultra, high-speed network link to Internet-2 was arranged for the main USU campus and the Simulation Center. This network link will enhance the University's teaching programs through the use of virtual reality methodologies and distance learning and was installed during 2001.

External and Internal Communication. During 2001, the on-going efforts of the Center for Informatics in Medicine, the Educational Technology with Computers Special Interest Group, the Office of University Affairs, the Civilian Human Resources Directorate, the Office of Research Administration, the publication of the USUHS Journal and the USU Quarterly Magazine, and the USU Information Services Management Center all combined to: facilitate awareness of the current activities of the University; provide electronic programs to enhance computer orientation courses, existing educational programs, and new educational services; and, create web pages for general information (including instructions, procedures, and evaluation processes) for the entire USU community. The sharing of the USUHS Journal with USU customers during both 2000 and 2001, has resulted in letters of acknowledgement and accolades from the Secretary of State, the Secretary of Defense, the Chairman of the Joint Chiefs of Staff, the Chief of Naval Operations, the Commandant of the Marine Corps, the Army Chief of Staff, the Secretary of the Air Force, Members of the United States Senate and House of Representatives, military associations, the American Medical Association, and many others.

Expanded Library Services to the Military Services. The USU Learning Resources Center (LRC), in collaboration with the USU Executive Committee and the Services, continued its attempts to extend its electronic library services (e.g., 90 full-text books and over 5,000 journals) to the Service libraries and DoD health professionals during 2000 and 2001.

Communication Services of the USU Information Services Management Center. The USU Information Services Management Center (UIS) continued throughout 2001 to implement projects for improving both technology and customer service at USU. **Customer Support -**UIS provided support and coordination services for 3,000 information systems users accessing e-mail, remote dial-in accounts, Internet Protocol connections, satellite, and software applications; 1,500 dial-in users; 2,750 telephone and fax lines; and 1,200 Voicemail Systems. As the owner of a Class B Internet License, UIS acts as the Internet Service

Provider and supports areas on and off the USU campus, such as the National Naval Medical Center, 12 off-site DoD locations, and various non-DoD facilities. **Desktop Computers -** In accordance with guidance from Health Affairs, a plan to lease desktop computers by the University has been implemented since 1998 through 2001. During 2001, 800 desktop computers were in four, three-year technology refreshment cycles. The replacement of 300 leased computers will take place in 2002. **Helpdesk -** The selection of a single set of desktop tools greatly simplified user support and improved helpdesk response from 1999 through 2001. The total calls assigned and resolved by the Helpdesk in 2001 totaled 2,124; of this number, 182 tickets were dial-up requests and 120 tickets were in response to computer viruses. Other projects during 2001 included: data base maintenance; test and deployment of new software products; deployment and replacement of leased machines; and, the management of UIS supported products. The helpdesk staff continued to participate in on-campus training on standard operating procedures and in off-site training to acquire professional certification, all of which contributed to a reduction in calls and an increase in user productivity.

8th Faculty Senate Research Day 2001. The 8th Annual Graduate Student Colloquium and Research Day 2001 were held at USU on April 10-11, 2001. This year's theme was "Emerging Research Technologies." The two-day event brought approximately 250 individuals to the USU campus, including researchers from affiliates such as the National Naval Medical Center, the Walter Reed Army Medical Center, and the Walter Reed Army Institute of Research. A total of 34 panelists and 144 posters made up a full, two-day program. Researchers were represented from a wide range of Washington-area institutions on seven different panels and nine concurrent poster sessions. Topics included infectious diseases, operational medicine, combat casualty care, space medicine, cancer research, neurology, endocrinology, cardiovascular research, behavioral research, and health promotion and education. This year's event included the addition of three well-attended, pre-meeting workshops on issues related to: conducting biomedical research at USU; emerging questions on the transfer of technology from research to licenses and patents; compliance with the evolving Federal regulations on human and animal research; and, career development strategies for students graduating in the 21st Century. The Graduate Student Colloquium featured six oral presentations by USU doctoral graduate students; also, poster presentations of many other students were available for viewing. The John W. Bullard Colloquium Lecture was presented by **Roy Curtiss III, George William and Irene Koechig Freiberg Professor of Biology, Washington University, St. Louis, Missouri**; the lecture was entitled "Salmonella: Our enemy and, in some forms, our friend." Prior to the afternoon sessions, graduate students were invited to join Dr. Curtiss for lunch and discussion. The keynote speaker for the 2001 USU Faculty Senate Research Day was **Olli-P Kallioniemi, M.D., Ph.D., Chief of the Cancer Genetics Branch, National Human Genome Research Institute, National Institutes of Health.** His presentation was entitled "Biochip Technologies for High-Throughput Cancer Research in the Post-Genome Era."

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RELEVANCE - MISSION ACCOMPLISHMENT

USU Graduates Provide Continuity and Leadership and Ensure Medical Readiness

The School of Medicine. Continuity and leadership ensure both readiness and the preservation of lessons learned during combat and casualty care; these were significant factors that motivated the Congress of the United States and the Executive Office of the President to recommend and approve the establishment of USU and the Health Professions Scholarship Program (HPSP) as complementary sources of accession for uniformed physicians. In 1972, Public Law 92-426, the Uniformed Services Health Professions Revitalization Act, established the HPSP to be a flexible source for the quantity of physicians required by the Armed Forces. USU was established to provide a cadre of military medical officers who would serve a career as active duty physicians and effectively ensure continuity and leadership for the MHS.

Continuity. With the graduation of the 22nd SOM Class in May of 2001, 3,101 uniformed officers have been granted Medical Degrees. Currently, the 2,465 USU physicians on active duty in the Armed Forces represent twenty-one percent (one out of every five) of the 11,833 physicians on active duty in the Army, Navy and Air Force; the congressional founders had hoped for a representation of ten percent. (In addition, there are 96 USU SOM alumni on active duty in the United States Public Health Service.)

Leadership. The overall retention for USU graduates from the Class of 1980 to the present (22 SOM classes) is 85 percent; the Congress had originally envisioned retention rates close to 70 percent. In accordance with this extraordinary retention, recent reviews have documented that one, out of every two SOM alumni, who has completed his/her residency training is in a significant operational or leadership position. Without a doubt, the continuity and leadership provided by the USU SOM alumni ensure readiness and the preservation of lessons learned for the MHS.

Medical Readiness. USU is the Nation's only University dedicated to ensure readiness for the MHS. In 1998, the Association of American Medical Colleges (AAMC) Reporter recognized USU as the "one place where the physicians of tomorrow do get thorough preparation to deal with the medical aspects of chemical and biological terrorism. USU students learn how nuclear, biological, and chemical agents act on the human body and what to do in the event of a suspected exposure - from detection to decontamination and medical countermeasures." The MHS must provide quality health care during humanitarian, civic assistance, or operational contingencies. This critical medical response requires that physicians in the MHS be provided a solid background in tropical medicine and hygiene, parasitology, and the use of epidemiologic methods and preventive medicine. USU students are provided with approximately 130 hours of study in these areas, compared to about 13 hours found in the typical civilian medical school curriculum. In addition, the multi-Service environment of USU facilitates the students' understanding of the cultures and vocabularies of the Army, Navy, Air Force, and the Public Health Service, which ensures two of the essential components of readiness: flexibility and continuity during joint service operational contingencies. And, the USU SOM has implemented innovative efforts to meet the evolving requirements of medical readiness: the newly established National Capital Area Medical Simulation Center and the USU Patient Simulation Laboratory; the SOM Department of Biomedical Informatics; and, the newly established interdisciplinary graduate program, Emerging Infectious Diseases (see Section II for a detailed description of these SOM programs). In December of 2001, following the terrorist attacks of September 11th, the AAMC Reporter once more featured USUHS and reconfirmed its earlier article. "Large-scale terrorist attacks and biological intimidation campaigns on American soil have sent shockwaves of change rippling through every layer of society. Each unexpected new challenge requires an adjustment in preconceptions and contains a practical lesson for the future. **But at USUHS, it is learning as usual. Students have been explicitly trained to**

provide a medical response to terrorism scenarios like the ones that are playing out in the United States and abroad today."

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The Graduate School of Nursing. In 1993, Congress directed the initiation of a demonstration program for the preparation of family nurse practitioners to meet the needs of the Uniformed Services. In the short time since its establishment, the USU Graduate School of Nursing (GSN) has 1) recruited a qualified faculty; 2) successfully established curricula for two programs; 3) identified accredited clinical practice sites and completed memoranda of understanding with 19 military treatment facilities; 4) submitted self-studies and received accreditation for its two programs from three professional accrediting entities; 5) received formal approval on February 26, 1996, from Health Affairs, Office of the Secretary of Defense; 6) initiated, implemented, and continuously reviewed the outcomes evaluation process for both academic programs; and, 7) awarded 157 Masters of Science in Nursing Degrees to advanced practice nurse graduates through its Nurse Practitioner and Certified Registered Nurse Anesthesia Programs (as of April 2002); all GSN graduates have passed their certification examinations; and, 97 percent, or 152, of the GSN graduates remain on active duty. The GSN is the first advanced nursing school in the United States to serve the Uniformed Services with a clear mission of "Learning to Care for Those in Harm's Way."

Advanced Degrees Earned Through Distance Learning. In 1999, the collaborative efforts of the GSN with the Department of Veterans Affairs (VA) in the area of distance learning successfully demonstrated a cost-effective form of advanced education where nursing students received advanced training in critically-required specialty areas while maintaining their current positions at the medical centers. Twenty-six students, through a "virtual commencement exercise," graduated from the VA/DoD Distance Learning Program on May 18, 1999; the virtual graduation was broadcast from USU and linked with eight VA Medical Centers located across the United States. All graduates were eligible to sit for the American Nurses Association Credentialing Examination for Adult Nurse Practitioners. This graduation marked the first virtual advanced-level graduation for either the VA or DoD. A second class, with students located in ten VA Medical Centers, graduated in May of 2001, for a total of 60 distance learning graduates. A third class is on-going. The experience gained by both the GSN and the VA will allow future projects in distance learning to benefit from the lessons learned and the technologies tested during the twenty-month program. In addition, a detailed analysis of the on-going effort is reported in the following publication: VA/DoD Post-Master Adult Nurse Practitioner Distance Learning Program - From Concept to Graduation, Graduate School of Nursing, USUHS, November 2000. (See Section III for a detailed description of this GSN program.)

National League for Nursing Accreditation Commission Recognizes GSN Students. The National League for Nursing Accrediting Commission (NLNAC) granted full accreditation to the USU GSN following a site visit on October 30 through November 1, 2001. The NLNAC recognized the readiness essential aspects and unique skills of the GSN curricula in its final report: **"This program provides an outstanding model for preparing advanced practice nurses for military service and care of patients in crisis and disaster situations. This program is on the cutting edge of effectively incorporating advanced technology into the curriculum and instruction process to produce a highly competent practitioner. This program can serve as a model to advance nursing education, practice and scholarship as nursing moves into care of the global community."**

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ACCREDITATION

The Middle States Association of Colleges and Schools. The University is accredited by the Middle States Association of Colleges and Schools Commission on Higher Education (MSA/CHE). The MSA/CHE is an institutional accrediting agency recognized by the United States Secretary of Education and the Commission on Recognition of Postsecondary Accreditation. Following its establishment in 1972, USU received "candidate for accreditation status" from the MSA/CHE in 1977, and has retained accreditation since 1984. In order to maintain the accreditation of the educational programs within the School of Medicine and the Graduate School of Nursing, the University must receive accreditation from the MSA/CHE. Accreditation by the MSA/CHE is an expression of confidence in an institution's mission and goals, its performance, and its resources. Based upon the results of an institutional self-study and an evaluation by a team of peers and colleagues assigned by the MSA/CHE, accreditation attests to the judgment of the MSA/CHE that an institution has met the following criteria: it is guided by well-defined and appropriate goals; it has established conditions and procedures under which its goals can be realized; it is accomplishing its goals substantially; and, it meets the standards of the MSA/CHE.

In 1993, the University underwent a successful institutional self-study and a reaccreditation site visit by the MSA/CHE. As requested by the MSA/CHE, a Periodic Report was submitted by USU to the MSA/CHE in June of 1998. In July of 1998, the MSA/CHE reported that the USU Periodic Report was ..."to be applauded for its serious and candid review of the areas of concerns pointed out by the Middle States Evaluation Team in 1993." The MSA/CHE correspondence further emphasized that **"it is clear that USUHS is responding to its internal and external environments and preparing aggressively for the future**... The move toward distance education is taking hold in education today... The Graduate School of Nursing is using this strategy to reach out to nurses... The Dean (SOM) has already begun to integrate duplicate programs, develop new ambulatory care sites and revise the medical curriculum." On December 1, 1998, the USUHS President was notified by the MSA/CHE that the University had been granted full accreditation, with no follow-up required.

The next evaluation visit by the MSA/CHE is scheduled for the Spring of 2003. The MSA/CHE does not prescribe a particular institutional planning process. However, it does strongly suggest that planning be conducted within the context of the institution's goals, priorities, resources, and commitments. This means, at a minimum, that the institution has: carried out a thorough examination of its mission; reviewed its internal and external environments to form preliminary estimates of its strengths, weaknesses, opportunities, and threats; developed and implemented a formal system for setting priorities and for developing budgets, strategies, activities, and timetables; and, devised an evaluation procedure for systematically reviewing self-study planning, the self-study process, and self-study findings and recommendations. A steering committee must be established which is responsible for providing leadership to the entire self-study process, to include: determining the key issues for the self-study; preparing the design; developing charges to the subcommittees and coordinating their work on the various issues studied; ensuring that the timetable is implemented as planned; arranging for one or more campus hearings to review drafts of the self-study; and, overseeing the completion of the final self-study report. In accordance with the above, the USU President established a steering committee to draft a self-study design proposal; the design proposal was submitted to the MSA/CHE staff liaison in April of 2001 for review and approval. The MSA/CHE liaison visited the USU campus on May 18, 2001, and met with members of the USU administration, the Board of Regents, and students and faculty; the outcome of the visit was quite positive, with only one recommendation for USU on the inclusion of information on how outcomes assessment will be integrated into the self-study document. The self-study design was revised to include the MSA/CHE liaison's recommendation and

received approval in August of 2001. During September of 2001, the University established fifteen self-study subcommittees. Draft reports were scheduled for submission to the steering committee beginning in early February of 2002; subcommittee final reports are due to the steering committee in May of 2002. The steering committee will review and merge the subcommittee reports into one comprehensive report for the MSA/CHE. A draft of the comprehensive report will be circulated to the University for review and comment. Revisions will be incorporated, as appropriate, into the draft document by the steering committee prior to the final review by the Office of the USU President; copies will then be submitted to the MSA/CHE. Submission of all required documents to the MSA/CHE will be completed by February of 2003.

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Fourteen Accrediting Entities Ensure that Educational Standards Are Met by the University. In addition to the MSA/CHE accreditation, the following thirteen professional organizations continue to authorize accreditation for the University's schools and programs:

SOM: 1) the Liaison Committee on Medical Education (LCME); 2) the Accreditation Council for Graduate Medical Education (ACGME); 3) the American Psychological Association Committee on Accreditation; 4) the Council on Education for Public Health;

GSN: (5) the National League for Nursing Accrediting Commission (NLNAC); 6) the Council on Accreditation of Nurse Anesthesia Programs (COA); 7) the American Association of Colleges of Nursing Commission on Collegiate Nursing Education (AACN/CCNE);

University: 8) the Nuclear Regulatory Commission (NRC); 9) the American Association for the Accreditation of Laboratory Animal Care (AAALAC); 10) the Accreditation Council for Continuing Medical Education (ACCME); 11) the American Nurses Credentialing Center's Commission on Accreditation; 12) the American College of Healthcare Executives (ACHE); and, 13) the State of Maryland Department of Health and Mental Hygiene Board of Social Work Examiners.

Individual discussions on the accreditation of the School of Medicine, the Graduate School of Nursing, the Graduate Education Programs, the Graduate Medical Education Program, and the Office of Continuing Education for Health Professionals are provided at sections II, III, IV, V, and VI of this report.

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OPTIMIZATION - OSD RECOGNITION OF USU's MULTIPLE PRODUCTS THE JOINT MERITORIOUS UNIT AWARD THE GENERATION OF COST-AVOIDANCE

I just received a copy of the Joint Meritorious Unit Award citation for USUHS. Congratulations! The entire staff can be justifiably proud. USUHS provides an invaluable service to the Armed Forces and to America. Nowhere else will you find a similar quality of research and medical training with the specific goal of meeting the demands of military medicine. And the price is right! As the citation points out, you are actually saving money for the government and the taxpayers.

- Letter from **the Honorable F. Whitten Peters, Secretary of the Air Force, Department of Defense**, dated January 20, 2001.

OSD-Conducted Surveys Recognize USU's Academic Certification and Faculty Credentials. In mid-1997, Management Reform Memorandum 3, Office of the Secretary of Defense (OSD), called for a study of the educational and professional development programs sponsored by OSD. That study and the efforts of the Defense Reform Task Force led to the Defense Reform Initiative's decision to establish an Office of the Chancellor for Education and Professional Development. Throughout 1997 and 1998, USU participated in intensive surveys on streamlining education throughout DoD. The University provided inclusive responses to the Office of the Deputy Assistant Secretary for Civilian Personnel Policy; those responses included all of the services and products resourced by USU as part of its operating cost. **The OSD-conducted surveys mark the first official OSD recognition of the multiple products of USU in addition to its medical school graduates.** As a result of those surveys, and based on the average course length of the continuing education efforts of the University, OSD analysts identified approximately 188 student man years in addition to the 820 (SOM - 660; GSN - 70; Graduate Education - 90) uniformed students who are traditionally credited to the University.

During 1998, in response to DoD's Defense Reform Initiative Directive 41, a two-part survey on faculty credentials was conducted for use in the development of a blueprint for the Office of the Chancellor to be established within OSD. **The Office of the Deputy Assistant Secretary for Civilian Personnel Policy concluded, as in August of 1997, that USU has the strongest academic certification and faculty credentials among all activities surveyed.**

The Office of the Chancellor for Education and Professional Development. **Jerome F. Smith, Jr., Ph.D.**, was named as the first Chancellor for Education and Professional Development by the Secretary of Defense; he was sworn in by the Deputy Secretary of Defense on October 2, 1998. In this position, he continues to serve as the principal advocate for the quality and cost effectiveness of education for civilian personnel in the Department of Defense. Since its establishment, the Office of the Chancellor for Education and Professional Development has maintained an open line of communication with the University. The Chancellor has participated in DoD's first two virtual graduation ceremonies at the USU GSN which were both held in May during 1999 and 2001. As a result, the DoD/Veterans Administration Distance Learning Program has celebrated the advanced graduation of a total of 60 "virtual" students. The Chancellor's Office also sponsored the Second Department of Defense Conference on Civilian Education and Professional Development, Quality Initiatives for the 21st Century: Continuing the Dialogue, at the USU complex on

August 8-9, 2000. Some 65 DoD organizations were represented. The Third Conference on Civilian Education and Professional Development: Making Excellence a Standard was scheduled for June 26-27, 2001, at the Joint Military Intelligence College.

As part of an on-going process for sharing information, the following University-wide faculty totals were included within a comprehensive report provided to the Office of the Chancellor of Education and Professional Development on October 31, 2001:

Full Time Faculty Assigned to USU - 322

- 204 civilians and 118 uniformed officers

Adjunct Faculty - 3,777

- 1,130 civilians and 2,647 uniformed officers.

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Joint Meritorious Unit Award. On December 11, 2000, the Secretary of Defense awarded the Joint Meritorious Unit Award to the University. **This significant award documents OSD's recognition of the essential mission, exceptional service over the past decade, and the multiple cost-effective programs of USU.** Public Law 92-426, the Uniformed Services Health Professions Revitalization Act of 1972, mandated that the University should meet the special needs of the Military Health System (MHS) through the provision of uniquely trained, career physician officers who would ensure continuity and leadership for the MHS. As validated by the Secretary of Defense in the citation for the award, the University has exceeded the goals set by the early visionaries who established USU.

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Multiple Products and Services Generate Cost-Avoidance for the Military Health System. Critical to the University's efforts for optimization, the Middle States Association of Colleges and Schools Commission on Higher Education (MSA/CHE) has granted full accreditation to USU since 1984. This essential accreditation has enabled the University to support and generate cost avoidance for the MHS through its multiple educational programs, all of which are fully accredited by a total of thirteen independent accrediting entities, in addition to the MSA/CHE. In meeting the mandates of its establishing legislation and the standards for accreditation as an academic institution, USU provides the following services and products for the Military Health System (MHS), all of which are recognized by the Office of the Secretary of Defense:

1) The principal product of USU continues to be its 3,101 USU SOM uniquely trained, career-oriented physicians who are prepared to practice military medicine in the multi-Service environment of USU (totals are effective through April of 2002); the 2,465 USU SOM alumni on active duty in the Armed Forces represent twenty-one percent of the 11,833 physicians on active duty in the MHS (Army - 4,149; Navy - 4,100; Air Force - 3,584). In addition, 96 USU SOM alumni

continue to serve on active duty in the United States Public Health Service, for a total of 2,561 USU SOM alumni who continue to serve their Nation in the Uniformed Services; the overall retention for USU SOM graduates from the first graduating Class of 1980 through April of 2002, is 85 percent; and, of the USU SOM alumni who have completed their residency training, almost one out of every two USU graduates holds an operational or leadership position;

2) The fully accredited USU Graduate School of Nursing (GSN) has provided 157 Masters of Science in Nursing Degrees to advanced practice nurse graduates through its Family Nurse Practitioner and Certified Registered Nurse Anesthesia Programs (as of April 2002);

3) In 2001, during their course of teaching, the USU faculty provided over 134,990 hours of clinical care at the Army, Navy, and Air Force Medical Treatment Facilities (MTFs) in the National Capital Area; **the annual, manpower cost avoidance generated by the USU faculty through this clinical support is estimated at $9,289,913;**

4) As of April 2002, the SOM Graduate Degree Programs have conferred a total of 678 Basic Science Degrees; **the annual cost avoidance generated by the USU SOM Graduate Education Programs for the MHS during 2001 was estimated at $750,000**;

5) The USU Office of Graduate Medical Education (GME) provides cost-effective support for the MHS in that it serves as the Administrative Office for the National Capital Consortium (NCC); collects and evaluates data on DoD GME programs to ensure academic and scientific excellence; and, oversees the integration of DoD GME programs to ensure that accreditation is not jeopardized. As of December 31, 2001, the NCC sponsors 55 of 62 integrated medical training programs;

6) The USU Office of Continuing Education for Health Professionals (CHE), to include the Military Training Network (MTN), provides significant, cost-effective support for the MHS by facilitating the continued professional growth of health care professionals throughout the MHS; **because CHE and MTN bring training to the military health care providers, an annual, estimated cost-avoidance of $13,283,174 was generated during 2001 for the MHS)**;

7) USU serves as the Academic Center for academic and research activities for 2,647 active-duty, off-campus USU faculty located throughout the MHS; USU on-site faculty have sponsored, hosted, or participated in the major conferences held by the MHS; in addition, military relevant consultation is continuously provided to the MHS and other federal agencies by the internationally recognized experts within the University's multiple centers, departments, and institutes; and,

8) The USU GSN Distance Learning Program, a collaborative effort with the Department of Veterans Affairs (VA), graduated its second class on May 15, 2001, for a total of 60 graduates; the experience gained by both the GSN and the VA, to include their collaborative report, From Concept to Graduation, will allow future, cost-effective DoD projects utilizing distance learning to benefit from the lessons learned and the technologies tested during this twice-completed twenty-month program.

All of these products and services are resourced as part of the operating cost of the University and are discussed throughout this report.

In summary, the strengthened relationship of the University with OSD and OSD's recognition of the numerous cost-effective programs of USU is documented by the following: 1) the OSD surveys of 1997 and 1998 which officially recognize the multiple products, academic certification, and faculty credentials of USU; 2) the USU Board of Regents' Reports to the Secretary of Defense which serve as direct and successful lines of communication with the Secretary of Defense; 3) the awarding of the Joint Meritorious Unit Award to USU by the Secretary of Defense which specifically recognizes the multiple, cost-effective programs of USU; and, 4) the letter from the Secretary of Defense dated March 21, 2001, cited on page four of this report, which recognizes USU as the "backbone" of the Military Health System.

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ACADEMIC CENTER FOR THE MILITARY HEALTH SYSTEM

Our Uniformed Services University of the Health Sciences has robust and long-standing educational programs in the medical aspects of biological and chemical terrorism developed for our military medical, nursing, and graduate students. The University is now actively involved in adapting these programs to the civilian medical education community in both traditional and interactive web-based formats. The University works closely with other federal agencies, the private sector, the American Association of Medical Colleges, and the American Medical Association to accomplish these important and timely educational goals. Finally, the University will be a major contributor in the American Association of Medical Colleges Health Education Coalition on Bioterrorism Conference later this month.

- **The Honorable William Winkenwerder, Jr., M.D., Assistant Secretary of Defense for Health Affairs**, Testimony before the House Committee on Government Reform, Subcommittee on National Security, Veterans' Affairs, and International Relations, November 7, 2001.

Active-Duty, Off-Campus USU Faculty Total 2,647. Multiple USU academic and research activities contribute to the medical knowledge and technology base available to the MHS. During 2001, 2,647 active-duty, off-campus USU faculty members throughout the MHS collaborated with the University through academic and research efforts. Through these collaborative efforts, USU serves as the Academic Center for those military medical officers and health care providers who seek to advance their military careers and their knowledge of uniformed health care. For their valuable service to the University, these active duty, off-campus faculty members are awarded appropriate academic rank. **This section provides selected examples of military relevant conferences or academic activities sponsored by, or collaborated with, the University; all of which document why USU is serving as the Academic Center for Military Medicine.**

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15th Conference on Military Medicine - A Challenge to Readiness: Maintaining Currency in Military Medical Education, June 4-7, 2001, USU Campus. The University continued to serve as the Academic Center for Military Medicine through the planning and presentation of the 15th Conference on Military Medicine - "A Challenge to Readiness: Maintaining Currency in Military Medical Education," which was held on the USU campus from June 4-7, 2001, with 74 attendees. The military medicine conferences are annual continuing education activities which focus specifically on current challenges facing military medicine. The 2001 Conference on Military Medicine addressed a relevant and most significant area of concern for military readiness, that of maintaining currency in health care education. Of the 74 participants who attended the 15th Conference on Military Medicine, specialty groups largely included physicians (39) and nurses (22); however, 13 members of the medical service corps and other interested individuals were also in attendance. Presenters during the opening plenary session included: **Rear Admiral (Retired) William Rowley, M.D.**, a prominent futurist; **Colonel (Retired) Craig H. Llewellyn, M.D., MPH, MS, Professor and former Chair of the USU SOM Department of Military and Emergency Medicine**; **David P. Stevens, M.D., Vice President for Medical School Standards and Assessment**, **Association of American Medical Colleges (AAMC)**; and, **Rear Admiral Richard A. Mayo, USN, Deputy Director, Medical Readiness Directorate, J4-MRD, Office of the Joint Chiefs of Staff**. Briefings were also provided by the Service Medical Departments.

Continuing Medical and Nursing Education. USU is accredited by the Accreditation Council for Continuing Medical Education to sponsor continuing medical education for physicians. The USU Office of Continuing Education for Health Professionals (CHE) took responsibility for the content, quality, and scientific integrity of the 15th Conference on Military Medicine. USU CHE designated this educational activity for a maximum of 25.50 hours in Category 1 credit towards the American Medical Association Physician's Recognition Award. USU is also accredited as a provider of continuing education in nursing by the American Nurses Credentialing Center's Commission on Accreditation; the 2001 Conference on Military Medicine was recognized for 30.7 contact hours by the USU Office of CHE.

Conference Focus. The Uniformed Services University of the Health Sciences is committed to ensuring that its students are prepared to provide health care for the MHS in a rapidly changing world. The focus of the conference was on predicting the changes that will impact the provision of military health care and on recommending the new educational objectives for properly preparing military health care practitioners for the next twenty to thirty years. During the conference, it was clearly evident to the attendees that changes in both the content and structure of medical education and military medical education were already underway throughout the USU SOM.

Discussion Topics. Experts in military and contingency medicine contributed their expertise, experience, opinions, predictions, and, most importantly, their recommendations for the planning and implementation of military medical education and training by the DoD over the next thirty years. The conference began with a plenary session during which selected experts reviewed current military medicine educational and training programs and offered their predictions in four principal topic areas: 1) new technologies, both medical and non-medical, that are likely to significantly influence the practice of military medicine over the next twenty to thirty years; 2) changes in the Service's missions and doctrines that will impact future health care delivery and the practice of military medicine; 3) emerging threats - new emerging or re-emerging diseases, and new weapons or new weapon technologies; and, 4) changes in ethics, mores, and societal expectations that may affect the future practice of military medicine. The opening plenary session provided background information and defined the deliverables for each of the working panels.

Four Working Panels. Following the plenary session, each of the four working panels developed and then presented their predictions and recommendations for educational objectives that, if met, would prepare today's students for medical practice in twenty to thirty years. While it is impossible to precisely predict the future, the panels concentrated on those aspects which could reasonably be determined and where human nature remains fairly constant, regardless of how technology evolves. Despite unprecedented changes in the technology of war, the participants were confident that a considerable portion of the current and newly designated military medicine educational objectives discussed and developed during the conference would remain relevant for the forseeable future.

Summary of Educational Recommendations. In the context of an evolving future that is difficult to predict, 27 educational recommendations were made by the participants of the 15th Conference on Military Medicine. The conference participants agreed that students of medicine should demonstrate the following:

1) Ability to recognize and treat emerging diseases and other threats, and to demonstrate an understanding of the battlefield force-protection issues related to these new threats; also, the ability to recognize syndromes and symptom "sets" and to utilize advances in immunology, molecular biology, vaccinology, and genetics to diagnose and treat the "new" or re-emerging disease threats and emerging weapons technologies;

2) Expertise in managing emerging diseases and injuries deriving from new and emerging weapons technologies;

3) Working knowledge of basic public health skills in outbreak investigation and associated immunology, molecular biology, vaccinology, genetics, and risk communication;

4) Ability to provide leadership in complex and changing strategic and tactical scenarios;

5) A high level of competence in emergency and operational medical skills, as the likelihood is good that military medicine will be provided from dispersed or isolated medical treatment facilities on the modern battlefield;

6) Working knowledge of simulated tactical situations which require the simultaneous application and integration of force protection, population health, varied medical capabilities, and people; and, knowledge of the multiple evacuation options in both a networked high-technology and low-technology battlefield, in either a low or high tempo environment;

7) Comprehensive understanding of the full range of force protection threats, both medical and non-medical;

8) Ability to simultaneously address or provide force protection, life-saving and life-sustaining medical care, and force enhancement for a dispersed military force across the spectrum of prevention and physical, social, and spiritual interventions with sensitivity to cultural, demographic, economic, and political differences;

9) Ability to function in multi-Service, multi-national, and non-governmental organizations, often in changing operational settings;

10) Team work and decision-making skills in changing environments that include individuals with differing skill-sets, medical and non-medical, with diverse, even international, backgrounds and organizations;

11) Competence in disaster planning and medical “consequence” management in diverse and evolving tactical environments, including military support of adverse civil events;

12) Ability to demonstrate consequence-management skills (ability to deal with environmental and population needs and risks as a consequence of a toxic exposure) as well as medical intervention in toxic events and environments, including pertinent physiological events, molecular biology, genetics, and risk communication;

13) Ability to apply systems-critical thinking to the conduct of military medical planning and medical logistics with special emphasis on functioning in diverse, joint, coalition, and non-government agency medical organizations;

14) Ability to make sound decisions during the “fog of war” and in the absence of complete and/or accurate information;

15) Ability to help develop and use military medical mission-support systems in response to differing military options;

16) Familiarity with all of the advances in militarily-relevant medical technologies in genomics and proteomics, particularly those that may apply to selection and force enhancement;

17) Ability to perform integrated medical decision-making that combines the scope of basic and advanced informatics from biosensors, genomics, artificial intelligence, digitization, virtual reality, and nano- and biotechnologies;

18) Expertise in the application of both medical and medically-related information technologies;

19) Ability to develop and appropriately apply customized therapies that can be used both in high and low technology environments;

20) Ability to take advantage of medical informatics, both in peace and in war, including the use of biosensors and automated tools of intervention;

21) A basic understanding of applied neuroscience as a tool for education;

22) An understanding of society's view of military medicine and its expectations of the military and medicine in the overall health care environment of the United States;

23) Competency in the principles of justice and confidentiality and the ability to properly allocate limited resources to diverse populations in ambiguous clinical situations and diverse environments, while involving patients in the management of their health;

24) Ability to keep patient expectations in line with probable outcomes, while involving the patient in medical decision-making;

25) Ability to clearly communicate risk and benefit information to patients and assist them in making appropriate medical decisions which are consistent with, and complementary to, the other aspects of their lives; also, to support a patient's decision-making process, with more than a superficial understanding of statistics, disease risk, and population health;

26) A basic understanding of modern finance and business models that may be applicable to the future military medical environment; and,

27) Acquisition of life-long learning skills through self-initiated education via a wide range of educational modalities.

The Sixteenth Conference on Military Medicine will be held in mid-2002; the attendees will help to determine which metrics should be used to measure whether the changes recommended during the preceding conference have achieved their desired effect.

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Planning for Biological Events: Responses to Terrorism and Infectious Disease Outbreaks - A Three-Day Conference. The Center for the Study of Traumatic Stress of the USU SOM Department of Psychiatry organized and sponsored a three-day conference with the Center for Mental Health Services, Substance Abuse and Mental Health Services Administration, Department of Health and Human Services. The conference, "Planning for Biological Events: Responses to Terrorism and Infectious Disease Outbreaks," was held on October 19-21, 2001. The thirty-two attendees included internationally known scientists, public health and mental health leaders from the state and local levels and representatives from the state executive branches. The essential nature of the conference was significant as it was held within the immediate timeframe following the initial bioterrorist anthrax attacks in New York City and Washington, D.C.

Background. Bioterrorism differs from natural disasters in a number of fundamental ways. The microbial world is invisible, mysterious, frightening, and unknown to many, including national leaders, members of the media, and the general public. Bioterrorism is an act of human malice intended to injure and kill civilians and is associated with a higher rate of psychiatric morbidity than are "acts of God." A hurricane is usually an isolated event with subsequent consequences. **Bioterrorism**, in contrast, due to the incubation period of microorganisms, and evolving echoes of exposure, fear, and possible spread of contagion, **is a process trauma with consequences spread widely over time**. In addition, there is the threat of further attacks, announced or covert. Bioterrorism is unbounded by time and space. Global travel can spread infected, asymptomatic individuals widely and quickly. The agents responsible for infectious diseases cannot be discerned by our unaided senses which creates uncertainty and a sense of vulnerability and fear.

Bioterrorism causes unfamiliar diseases which are diagnostic and treatment challenges. Today's medical community has limited experience with the diseases produced by bioterrorism agents such as anthrax and smallpox. Naturally occurring outbreaks of infection may be difficult to distinguish from intentional attacks. Patient presentations and the at-risk populations differ in a terrorist attack from naturally occurring outbreaks because of the different routes of dissemination and possibly altered microorganisms. In contrast to a natural disaster, bioterrorism does not produce a readily apparent disaster scene. The "first responders" to bioterrorism are not the traditional fire and police groups; command-and-control teams for bioterrorism consequence management are different than those in other disasters. Following bioterrorist events, public health, medical institutions, and law enforcement have lead roles. The intelligence and law enforcement communities are essential to preventive efforts. Because bioterrorist attacks are decentralized, they require multiple levels of intervention and create additional challenges by inspiring copycats and hoaxes.

Terrorism's primary goal is to destabilize trust in public institutions; biological terrorism, in particular, can strike at the public's faith in its institutions and jeopardize the continuity of society. In the case of contagious agents, neighbors may be perceived as in desperate need and at the same time as a potential source of infection. Although experience with other disasters indicates that most individuals will act with altruism, some will maximize their personal safety. While some individuals may desert the infected, others will expose themselves needlessly to carry out acts of kindness. All of these responses may result in disappointed expectations and unnecessary injury and community disruption. **Carefully constructed plans for community guidance and information can organize post-disaster behavior; the absence of such plans invites chaos.** Institutions, which must respond to the sudden surge of need following a bioterrorist event, are particularly vulnerable to disorganization and breakdown. Although in general, panic is rare in disasters, these groups and institutions, which may be overwhelmed by mass casualties and massive demands, are at some risk of panic. **An untrained, uneducated, and unprepared staff may also be at risk to panic. Planning and pre-disaster exercises are critical to the prevention of these responses.**

Conference Focus. Biological agents are the "atomic concern" for the New Millennium. Agents such as bacteria, viruses, and prions can create chaos and national disruption. Future management of bioterrorism requires a multidisciplinary approach to understanding the effects of these agents on nations, communities, families, and individuals. The conference was organized to: 1) examine how communities perceive their needs for behavioral and mental health response preparedness in anticipation of bioterrorism and infectious disease outbreaks (in the wake of training provided by the Departments of Defense and Justice); 2) develop recommendations for behaviorally and psychologically informed interventions to maintain and/or restore community function; 3) provide recommendations on health communication and risk appraisal to state and local community leaders and others in order to respond more effectively to the mental health consequences of terrorist attacks; and, 4) develop recommendations for the essential education, training, and resource needs that would be required when assisting state and local officials in preparing for the mental health aspects of infectious disease outbreaks.

Conference Topics. The conference included four major presentations: 1) Learning from the Past: The 1918 Influenza Pandemic; 2) Biological Agents of Terror & Community Response; 3) State and Local Response Plans; and, 4) The New York City Experience. In early 2002, a comprehensive summary entitled, From the Conference, Planning for Biological Events: Responses to Terrorism & Infectious Disease Outbreaks, was published by the USU Center for the Study of Traumatic Stress.

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5th International Conference on Tactical Emergency Medical Support, "TEMS 2001: A Medical Odyssey." The USU Casualty Care Research Center (CCRC) conducted the 5th International Conference on Tactical Emergency Medical Support, "TEMS 2001: A Medical Odyssey," on June 8-10, 2001. An international audience of more than 200 participants attended the conference to address issues facing the tactical medical provider in the new Century. This year, the conference offered attendees the opportunity to participate in two pre-conference workshops during the first day. The two sessions: "Defensive Tactics for the Tactical Medic" and "Enhanced Skills for Maintaining the Health of the Tactical Team," were quite well received and maximum attendance was achieved for both sessions.

Background. The USU Casualty Care Research Center (CCRC) was established in July of 1989 under the USU SOM Department of Military and Emergency Medicine as a center of excellence for injury control and casualty care research. The Center's efforts provide research, education and consultative/operational support to USU, the Uniformed Services, and other federal, state, and local elements. When fully funded, the Center has operated entirely on extramural funding, employing 11 full time personnel; the CCRC staff is supplemented by 19 part-time volunteers and military officers loaned on an intermittent basis by their parent commands. The location of the CCRC within the multi-Service environment of USU is critical to the development and sustainment of the CCRC's ability to maintain its core competency - the capability to provide military-unique, medical expertise and experience as required by both uniformed and civilian emergency responders to WMD-related and other national security contingencies. Since 1989, the CCRC programs have successfully served as a bridge between DoD and civilian emergency responders for the coordination and sharing of critical, military-unique medical knowledge, technology, and expertise.

Conference Focus. The conference curriculum focused on issues such as pain management and field surgery for the tactical medic, as well as important preventive medicine issues such as fatigue and sleep deprivation, nutrition and orthopedic injuries in the tactical environment. Additionally, there were opportunities to review various administrative issues which are paramount to the success of a tactical medical program. Such issues included TEMS insurance problems, TEMS protocols, and TEMS integration with trauma centers. The "Dundalk, Maryland Stand-Off" and the "Texas-Seven Apprehension" were two of the case studies presented at the 2001 conference in which tactical medics played a major role. Also of great interest was a review of the Littleton, Colorado, CO TEMS Unit's development and progress since the Columbine High School Incident and the tactical/medical approach to crowd control. The David L. Rasumoff Award for Heroism was presented to Deputy U.S. Marshal Christopher Daniels for the rescue of his partner who was wounded during a warrant service which evolved into a "stand-off." The award was presented to Deputy Daniels by Louis McKinney, Acting Director, U.S. Marshals Service, and Mr. Joshua Vayer, Director, CCRC.

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USU Center Sponsors Three-Day Pre-Conference Symposium at the 59th Annual Conference of the United States - Mexico Border Health Association. The USU Center for Disaster and Humanitarian Assistance Medicine (CDHAM) of the USU Department of Military and Emergency Medicine, hosted a three-day, pre-conference symposium for community emergency first-responders, civil authorities, border health workers, and military personnel of the United States and Mexican Armed Forces as part of the 59th Annual Conference of the United States - Mexico Border Health Association (USMBHA).

Symposium Focus. The pre-conference focused on the fact that while global medical communities have a growing understanding, capacity, and capability to provide life-saving care following natural disasters, the unique challenges of man-made disasters, which range from accidents to terrorism, and from hazardous materials exposures to emerging infections, pose new challenges to science, medicine, and international partnerships. Over 75 participants shared experiences and lessons learned during the symposium in order to gain an understanding of "first principles" that may be common across events and cultures.

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ORGANIZATIONAL CULTURE

This goal deals with organizational culture, which has a responsibility for sensitivity to all social patterns of work, interaction, and thought typical for our community in contemporary time. This leads to thinking of processes like opportunity, personal growth, atmosphere, image, engagement, bonding, sense of worthfulness, and the final common pathway of this goal - interdependency. No matter what is assigned to this goal, it must pass through the kind of window just described. If it does not have meaning for the community of the whole, then it is not organizational culture.

- Philosophy of Goal 6, USU Strategic Plan: We will create a powerful, committed, and energized University family.

Continuous Efforts to Ensure a Diverse Community that Is Powerful, Committed, and Energized. A common challenge for most educational institutions is the goal to recruit and retain highly qualified students, faculty, and staff. As USU works to achieve that goal, it must also strive to reflect the diversity which exists in both the Services and our Nation. The five USU Offices of University Recruitment and Diversity Affairs (RDO), Student Affairs (OSA), Civilian Equal Employment Opportunity (EEO), Military Equal Opportunity (EO), and the Brigade Commander (BDE) and the Civilian Human Resources (CHR) Directorate collaborated during 2001 to ensure that the University continued to promote respect, appreciation, and understanding throughout its multi-Service activities. During 2001, the University's emphasis was on encouraging cooperation, development, diversity, communication, and collegiality by: 1) the identification and encouragement of equal opportunity principles and diverse cultures through numerous university forums, individual counseling sessions, recruitment strategies, and community service activities; 2) the timely sharing of relevant information through continuing orientation programs, on-going USU publications, educational web sites, and advanced technology; and, 3) the provision of extensive development and recognition programs for the civilian and military members of the USU family.

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Communicating Equal Opportunity Principles and Appreciation of Diversity.

530 USU Personnel Attend Three Community Sessions. The January 2001, Dr. Martin Luther King Birthday Celebration: "Living the Dream, Let Freedom Ring," featured **Admiral David Satcher, M.D., Ph.D., U.S. Assistant Secretary for Health and Surgeon General of the United States** . The USU Office of EEO coordinated this event which was attended by over 300 USU faculty, staff, and students. Then, in response to the emotional stress following the events of September 11th, a USU Family Day Presentation, "Coping with the Effects of Terrorism," was held on October 18, 2001. With 80 USU community members in attendance, **Michael Feuerstein, Ph.D., Professor, USU Department of Medical and Clinical Psychology**, discussed five topic areas: defining terrorist attacks and why they are so frightening; the reaction to such events; coping with the present; what has worked in assisting the community to cope with stress; and, the available sources of support and counseling. In addition, a USU Memorial Service for the Victims of September 11, 2001, was coordinated by the Office of the USU Brigade Chaplain. One hundred and fifty members of the USU family gathered to share concerns, words of assurance, and renewed dedication to our Nation.

Student Professional Activities and Meetings. The coordinating efforts of the USU Office of Recruitment and Diversity Affairs, members of the USU Student National Medical Association (SNMA) Chapter, and Women in Medicine and Science (WIMS) resulted in the successful sponsoring of numerous meetings and activities throughout 2001. Dinner socials provided SNMA and WIMS members with an opportunity to socialize and network with faculty and physicians in a relaxed atmosphere; and, opportunities were provided for discussing important issues such as residency selections, physician and patient expectations, professional demands in the military setting, effective time management, and societal minority and gender issues.

Also during 2001, the USU medical students continued weekly and/or monthly trips to public schools to discuss medicine, science, research, and the medical profession with young students through a community outreach program entitled the Youth Science Enrichment Program (YSEP). The YSEP is designed to motivate America's youth toward medical, scientific, and military careers. The USU students familiarized the young students with such areas as the human skeleton, first aid care with bandaging and braces, and medical triage based on the severity of injuries and potential scenarios. In addition, the Youth Science Enrichment Program (YSEP) Committee, under the leadership of the USU SNMA, continued its coordination of on-going USU community support for the Washington, D.C. public schools through visits and seminar presentations.

Provision of Formal and Informal Counseling. The USU Offices of Equal Employment Opportunity (EEO), Equal Opportunity (EO), Recruitment and Diversity Affairs (RDO), and Student Affairs (OSA) continued to provide formal and informal counseling throughout the Year 2001. The EO Office (military) did not have to provide formal counseling sessions to the uniformed members of USU during 2001; the EEO Office provided one formal and ten informal counseling sessions to the civilian staff during the past year. Beginning in September, OSA conducted well over 300 formal interview and counseling sessions for the first and third year medical students; in addition, RDO also provided individual counseling sessions for numerous uniformed students. The success of these counseling sessions is evidenced by the ever increasing appreciation and respect shared among the individual members of the University. In addition, the EO representatives for the USU Brigade provided EO training for all uniformed members of the University during 2001; the training sessions addressed diversity, acceptance of others, management of difficult situations, and the identification of harassment in both the work place and in an academic setting.

Faculty Senate Outreach Program for Working Mothers. In response to recommendations of the USU faculty and the President of the Faculty Senate, the Office of Administration and Management coordinated the construction and establishment of a Mother's Lactation Room to assist working mothers who wish to continue breast-feeding their babies after returning to work. The room provides for privacy and is equipped with appropriate furniture, electrical outlets, and a refrigerator for the storage of expressed milk. At the time of its establishment during 2000, USU was the only DoD entity to provide such a facility. The program continued throughout 2001.

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Timely Sharing of Information.

The USU Web Is Used to Provide Information Throughout the USU Community. During 2001, the Center for Informatics in Medicine continued to provide computer orientation courses for faculty and students. The Center maintains about 100 web sites which support the educational mission of the University. Additional web sites provide on-line, self-assessment tools for USU students and on-line quizzes and exams for both on-site and distance learning students. The Education Through Technology Special Interest Group, monitored by the Office of the Vice President for Teaching and Research Support, provided electronic programs to enhance existing educational programs and new educational services. Regularly scheduled meetings between faculty representatives, staff, and executive management included the electronic distribution of meeting summaries.

The 2000 Edition of the USU Journal. To ensure that information was shared with both internal and external customers, the University published and distributed more than 800 copies of the 2000 Edition of the USU Journal. This document provides an inclusive background on the history and development of the University; it also describes the achievements of the past year and any changes which may have taken place throughout USU's educational programs, centers, and institutes. The Journal serves as a source document for the University's responses to congressional, executive, and general requests for information throughout the current year. This annual report documents how relevance, readiness, and optimization are successfully emphasized throughout the University's programs and activities. Numerous letters of acknowledgement and accolades were received by the University following its initial distribution; selected examples include: the Deputy Secretary of Defense, the Secretary of the Air Force, the Chairman of the Joint Chiefs of Staff, the Chief of Naval Operations, the Commandant of the Marine Corps, the American Medical Association, and the current Secretary of State.

USU Orientation Program. From October of 2000 through 2001, the USU Civilian Human Resources Directorate, with the participation of the senior leadership at USU, has sponsored formal sessions of the USU Faculty and Staff Orientation Program for 137 civilian and uniformed members of the University community: 45 in 2000; and, 92 during two sessions held in 2001. Initially coordinated by the USU Civilian Human Resources Directorate, the Military Personnel Office, and the Associate Dean of the Graduate School of Nursing, the purpose of the on-going program is to present the newly-hired members of the USU community with the philosophy, goals, policies, and leadership principles of USU. Orientation packets with key facts and other selected information are provided for review and future reference. The orientation process has promoted a positive initial employment experience and has successfully initiated the socialization of 137 new employees with the USU organizational culture.

USU Web Presents Faculty Handbook. Since February of 2000 through 2001, the SOM Office of Faculty Affairs has provided a faculty handbook through the USU Web; the handbook describes the organization and functions of the various components of the University. It is also designed to orient the new USU faculty members to the structure and history of the University, the School of Medicine, and the Graduate School of Nursing; and, the handbook serves as a quick guide for the delegation of responsibilities at the University and where to seek information, guidance, or other faculty-related requirements.

USU Development Program. The Vice President for Executive Affairs presented the newly established USU Development Program to the USU Board of Regents in August of 1999. Initially, consultants at the Mayo Clinic and Harvard University mentored the new Program. The USU Development Program was established to be compliant with federal law, which prohibits USU from soliciting funding. The Program continues its development in cooperation with the Henry M. Jackson Foundation where non-federal funding was identified to be used in hiring the initial staff. A marketing video and CD-ROM were also completed during 1999. Since the establishment of the Program, the Packard Foundation has notified the University that it has approved $1 million for a Packard Chair in the Department of Surgery. Under the supervision of the USU Vice President for Executive Affairs, **Mrs. Helaine C. Ahern**, was hired by the Henry M. Jackson Foundation to serve as the Assistant Vice President for Development. Mrs. Ahern continued and expanded the existing development programs, to include the addition of a short-term business plan which outlines the resources and activities required to address the current list of priorities defined by the University (for example, the procurement of endowments for interdepartmental programs or institutes). During 2000, through the Henry M. Jackson Foundation, the Development Program successfully inaugurated the first annual appeal to the USU Alumni which resulted in numerous positive responses; during 2001, a second mailing resulted in responses from 150 USU alumni. Also during 2001, Mrs. Ahern drafted USU's first, "case for support," a document focusing on the University's (and military medicine's) evolution, program strengths, accomplishments, and selected strategic funding requirements. This effort was complemented by the University's renewed strategic planning process; Mrs. Ahern was designated to lead the strategic planning team focused on the identification of increased funding sources for USU. In coordination with the University President, the focus of this strategic planning team will be on infectious diseases, healing and rehabilitation, stress, and travelers' health. In addition, during 2001, this Program took the lead in developing a semi-annual publication for use in increasing the visibility and external relations of USU; it will be directed toward alumni, potential donors, and other medical schools. In coordination with **Mrs. Sharon Willis, USU Alumni Affairs,** and the Office of University Affairs, the first issue, published in March of 2002, was thematically devoted to the USU community's response to September 11th. At this time, the Development Program continues its work to establish a small board of committed volunteers who will provide critical support to sustain the activities of the USU Development Program.

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Personal Development and Retention.

Individual Recognition. Throughout 2001, the USU community worked to build and strengthen cooperation, integrity, trust, and collegiality as well as to reward individual members for their contributions. An on-going performance evaluation process developed by the Civilian Human Resources Division (CHR) and the Brigade Command ensured that each employee received an annual rating and appropriate recognition for his/her accomplishments. During 2001, CHR continued its procedures for tracking individual employee's years of service. The University President personally presented service awards to designated employees at their work sites. To date, 80 civilian service awards have been presented; the program has been well received. At the same time, the Office of Military Personnel approved, processed, and presented 118 awards for the USU military personnel: 42 Joint Service Achievement Medals; 31 Joint Service Commendation Medals; 39 Defense Meritorious Service Medals; 2 Army Achievement Medals; and, 4 Army Commendation Medals.

Outstanding Employee with Disabilities. During 2001, USU also participated in the Department of Defense 21st Annual Disability Awards Ceremony for the National Disability Employment Awareness Month through the nomination and selection of **Mr. Roosevelt A. McCoy** for the Outstanding USU Employee with Disabilities; Mr. McCoy also received a certificate during the DoD Disability Awards Ceremony on December 11, 2001. Mr. McCoy is an Animal Caretaker Leader at the USU Center for Laboratory Medicine where he is responsible for the care of over 300 research animals. A 17-year employee of USU, he has been in his current position for 13 years. His concern for the animals is evident; and, he sets a standard of excellence, not only for himself, but for others. A creative problem solver, he manages an impressive and ever-increasing workload. In an effort to make work more efficient for himself and his co-workers, he has streamlined many of the operations in his area. His work in support of teaching and research activities is of great importance to researchers at USU. Mr. McCoy is hearing impaired and uses sign language to communicate. Most people in his department do not know how to sign, but several of his direct supervisors have learned basic sign language to make day-to-day communication easier. Mr. McCoy has taken a special interest in other USU employees with hearing impairments in his department; he is credited with helping many of them to excel on the job. Mr. McCoy is particularly interested in the Internet and encourages others to gain proficiency with computers as a means of communication. The certificate presented to Mr. McCoy during the DoD Annual Disability Awards Ceremony recognized him as an outstanding employee who brings skills and creativity to the USU/DoD workforce.

Communication of Accomplishments. Presentations of accomplishments by individuals, teams, and departments were also scheduled throughout the year. For example, the University faculty supporting the Advanced Technology Training Telepresence Surgery System, the Anesthesia Patient Simulator, and Military and Emergency Telemedicine Training gave demonstrations for the general University community as well as for the media and external contacts of the University throughout 2001.

Training Opportunities Provided to USU Employees. During 2001, the USU Offices of Civilian Human Resources (CHR), Medical Education (MEE), Faculty Affairs (ADF), Research Administration (REA), the Brigade Command (BDE), University Recruitment and Diversity Affairs (RDO), Equal Employment Opportunity (EEO), and Equal Opportunity (EO) provided programs and support to assist the University community in its self-development and training requirements. Civilian Human Resources (CHR) continued to expand the USU Mentor Program by sponsoring 34 participants; both the participants and their mentors received on-going training and guidance throughout 2001. CHR also sponsored the establishment of a University Toastmasters International Club in 1999; active participation continued during 2001 with 25 members. In addition, numerous training opportunities were provided by CHR to the USU civilian workforce which were linked closely with the establishment and expansion of Individual Development Plans. CHR used 175 training vouchers during 2001 and 60 on-line subscriptions for computer-related training for the Microsoft Office Suite. Through the use of vouchers, USU faculty and staff were provided opportunities to attend off-site computer classes through CompUSA and New Horizons. USU employees were also provided an on-line computer training option through a USU contract with Element University; on-line training allows the student to complete assignments through the Internet while at home or at work. A total of 163 employees were trained on-site, in addition to Ethics Training Classes conducted by the Office of the USU General Counsel. On-Site Classes provided by CHR included: Coping & Stress Management (18 participants); Time Management (32 participants); Forklift Operator Safety Training (20 participants); Retirement Planning (24 participants); Proofreading & Grammar Skills (24 participants); and, Speed Reading (45 participants).

USU Faculty Attend Development Courses and Seminars. The Department of Family Medicine, in coordination with the SOM Office of Faculty Affairs, offered numerous courses and seminars which strongly supported faculty development at the University. **During 2001, 250 attendees earned over 300 hours of continuing education.** The following are selected examples of the successful activities during 2001 which led to the enhancement of the professional skills of the USU faculty members: Use of PDA's in Clinical Environments; Moving into Administrative Roles; Medical Anthropology and Clinical Medicine; Preparing Teaching Materials; Teaching the Difficult Learner; Evaluation of Complementary and Alternative Medicine; Negotiation; the Adult Learner; and, Stress Reduction. In addition, a Colloquium was held to describe current research related to human/animal interactions and associated human health benefits. Speakers from six premier Universities presented their current research to the USU faculty, staff from the Offices of the Joint Nursing Chiefs, and representatives from the National Institutes of Health.

OSD Confirmation of USU Title 10 Authority. During Fiscal Years 1997 and 1998, there had been a one year suspension on the inclusion of allowances in the calculation of retirement benefits for the USU Administratively Determined (AD) employees (faculty and staff) who are covered under TIAA-CREF, Fidelity, or any other retirement system not established under Title 5 U.S.C. This issue, which involved USU's Title 10 authority, was resolved with OSD through the coordinated efforts of the OSD Office of the Deputy Assistant Secretary for Civilian Personnel Policy, Washington Headquarters Services, the USU President, and the USU Vice President for Administration and Management. As a result, the inclusion of allowances in the calculation of benefits for USU AD employees was reinstated by OSD for Fiscal Year 1999 and has been continued through the present; 2001 and current, OSD-approved, AD salary schedules include footnote references which confirm the reinstatement of this benefit.

Legislative Language Removes the Limits of Executive Level IV for the Annual Rate of Basic Pay. Previously, the annual rate of basic pay for USU AD employees was limited to be no more than the rate set for Executive Level IV. In many cases, this limitation resulted in the need for allowances to bring the total pay up to the limits established by OSD in the USU salary schedules. During the last quarter of Fiscal Year 1998, the OSD Office of the General Counsel, at the request of the Deputy Assistant Secretary for Civilian Personnel Policy, recommended the legislative change contained in Section 1108 of the Conference Report for the National Defense Authorization Act for Fiscal Year 2000. As a result, when the Authorization Bill for Fiscal Year 2000 was signed, it effectively removed the limitations of Level IV for the USU AD employees; as appropriate, the upper pay limits of the USU AD salary schedules are now limited to the rate set for Executive Level I. Implementation actions for the reduction of allowances were initiated and implemented during 2000 by CHR and were continued during 2001 to the present.

USU Administratively Determined Salary Schedules Are Approved. Previously, the USU salary schedules for the Administratively Determined (AD) employees had remained the same from 1993 through 1997. To address this concern, a Memorandum of Understanding signed by the OSD Office of Civilian Personnel Management Services (CPMS), the Navy Bureau of Medicine, and the USU President has successfully resulted in the implementation of annual comparability studies by CPMS. These comparability studies serve as a critical component in the on-going review, updating, and implementation process for the USU AD salary schedules. As an example of the implementation procedures, when the Principal Deputy Assistant Secretary of Defense (Force Management Policy) approved salary schedules for the USUHS AD employees on August 25, 1999, an increase in base pay was automatically provided for any AD employees whose base pay was lower than the minimum limits of the new salary scales. Updated salary schedules have

been continuously approved during 1998, 1999 and 2000. The approved AD salary schedules, effective in July of 2001, raised the lower pay limits for all salary ranges. And, on April 2, 2002, OSD approval was granted for the most recent USU AD salary schedules; these schedules will be effective from January 2002 until the next schedules are approved; as appropriate, the current AD salary schedules raise the upper pay limits to Executive Level I and provide greater flexibility in paying bonuses and retention allowances.

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University Recruitment and Diversity Affairs.

Implement a comprehensive plan for the recruitment and retention of qualified citizens to become uniformed personnel who will serve our diverse Nation as successful leaders, ready to respond to the Nation's medical and scientific needs during peace and war.

- Mission Statement for the Office of University Recruitment and Diversity Affairs, developed during 2001.

Office of University Recruitment and Diversity Affairs. The USU Office of Minority Affairs was established in 1991 with a mission to increase the participation and advancement of traditionally underrepresented minority and women students, faculty, and staff at the University. The Office of Minority Affairs, under the initial leadership of **Jeannette E. South-Paul, COL, MC, U.S., Vice President for Minority Affairs**, established numerous programs to especially increase the recruitment and retention of underrepresented minorities at the University. Following COL South-Paul's selection to serve as Chair, SOM Department of Family Medicine, **Charles W. Campbell, Jr., Col (Sel), USAF, MC, FS,** served as the second USU Vice President for Minority Affairs. In April of 1999, **Carolyn L. Miller, LtCol, USAF, BSC,** was selected as the third USU Vice President for Minority Affairs and she continues to serve in that capacity. During 1999, following extensive discussions with the USU President and the Board of Regents, the University's Strategic Plan specifically addressed University recruitment and diversity affairs. Subsequently, during 1999, the Office of Minority Affairs was renamed as the Office of University Recruitment and Minority Affairs; during 2000, strategy sessions to enhance the recruitment efforts of the University resulted in a decision to further modify the office title to the Office of Recruitment and Diversity Affairs (ORD). Today, the USU Strategic Plan retains strategies for both marketing the University and targeting the increased recruitment of women and underrepresented minorities. The Office of Recruitment and Diversity Affairs (ORD) remains committed to increasing the general public's awareness of the University; thus, ORD continues to market the University and introduce military medicine, USU, and the U.S. Public Health Service to prospective applicants. By the end of 2001, the following areas were included among the numerous program responsibilities of ORD: on-going recruitment efforts; retention and student support activities; community service; and, the USU Preparatory Program.

Institutional Role Model for Minority Recruitment and Retention. Also of note during 2001, was the successful nomination of USU as an institutional role model for minority recruitment and retention. The University was nominated by ORD based on its aggressive recruitment efforts and its extensive actions for the retention of underrepresented medical students. ORD documented that USU remains committed to the education and training of minority leaders, physicians, advanced nurses, and scientists in voluntary public service in the United States. In addition, ORD provided specific examples to validate that USU has established grants, cooperative research agreements, research endeavors, community service initiatives, and an office of recruitment and retention all of which target the underrepresented sector of the population to ensure that all citizens are aware of the opportunities provided by USU. Following a briefing by ORD during the Second Annual Minority Role Models Conference in Washington, D.C., the USU was approved as a minority role model institution. The conference was hosted by Minority Access, Inc., a non-profit educational organization which supports individuals, institutions, federal, state and local government agencies, and corporations in the diversification of their campuses and work sites by improving the recruitment, retention, and enhancement of minorities. The University will be presented the award during the next conference in 2002. USU initiatives and current practices documented by ORD will be published and shared with other institutions as "best practices."

USU Liaison Program. USU Alumni participation in the USU Liaison Program continued to evolve and grow during 2001. The USU Liaison Program involves the recruitment of medical school applicants by USU SOM alumni; these USU alumni serve as superb spokespersons for the University. As part of the Liaison Program during 2001, USU alumni made over 30 visits to universities, colleges, recruitment fairs, and reserve Officer Training Corps (ROTC) and Junior ROTC units. These efforts have resulted in the expansion of USU marketing efforts, the identification of new recruitment opportunities, and an increase in potential applicants. An aggressive recruitment initiative has also been formulated which targets USU alumni and links them with ROTC units in their areas of assignment. The alumni liaisons provide guidance and information to potential applicants. To date, USU alumni liaisons have attended recruitment fairs at all colleges and universities from which invitations have been received. Recruitment opportunities are especially sought at historically black colleges and other well known institutions with diverse student bodies.

Provision of USU Recruitment Materials. During 2001, ORD, as the centralized office for USU's recruitment efforts, responded to over 500 requests for the continued replenishment of USU materials initially provided in more than 6,000 packets of recruiting materials which were mailed to: Reserve Officer Training Corps (ROTC) Units; military bases (installations and hospital commanders, chief enlisted advisors and education offices); and, pre-medical advisors at the military Service Academies and undergraduate institutions nationwide. Additionally, ORD placed advertisements on USU programs in various undergraduate marketing venues; and, members of the USU community (e.g., faculty, staff, the Board of Regents, external contacts, etc.) were provided, upon request, with recruitment packets (USU recruitment video, CD-ROM, and USU brochures) for presentations at their hometown educational institutions, professional society meetings, or at various geographical sites while on travel. Throughout 2001, ORD staff responded to continuous inquiries from prospective applicants reference USU's various program requirements.

Joint Recruitment Venture with HPSP Recruiters. A significant initiative launched during 2001 was centered on a joint venture between USU and the recruitment staffs for the Health Professions Scholarship Program (HPSP). USU representatives attended the October 2001 HPSP TriService Conference; as a result, three initiatives were agreed upon: a proposed application form which includes both the USU and the HPSP Programs; the referral of USU applicants to the HPSP Program once the USU slots have been filled; and, HPSP links have been added to the USU recruitment web page. One example of the success of this new partnership occurred during the 2001 ORD staff visit to the Annual ROTC Basic Camp Branch Orientation at Fort Knox, Kentucky. USU was invited to join the U.S. Army and regional HPSP recruitment teams in presenting science and medical career opportunities to more than 1,700 cadets who attended the event. The continued sharing of resources between USU and the HPSP recruitment offices will be expanded throughout 2002.

Participation in USU Biomedical Research, Medical Education, and Clinical Operations. During 1999, USU and the University of Maryland Eastern Shore (UMES) began a collaborative effort to increase participation by minority students in biomedical research. USU and UMES have agreed to undertake initiatives to: increase the number of UMES undergraduate honor students enrolled in programs leading to a doctorate in the biomedical sciences; aid in the development of a research training infrastructure at UMES; foster the exchange of visiting faculties to conduct graduate seminars at each institution; and, increase the number of minority students enrolled in the graduate programs at USU. The USU Office of the Dean sponsored six students from UMES during the Summer of 2000. Those six students and one faculty member from UMES were able to participate in on-going research projects in various USU laboratories; the experience was a positive one for both the UMES personnel and USU. The program continued throughout 2001; the USU and UMES faculties and students shared collaborative research experiences, some of which resulted in scientific publications.

During October of 2001, an academic affiliation agreement was completed between USU and Franklin & Marshall (F&M) College. The agreement allows F&M pre-med students to participate in a "shadowing" program at USU and the local teaching hospitals. Under the agreement, USU will give F&M students access to USU faculty members, facilities, and medical student training and instruction. They will also observe clinical operations at the National Naval Medical Center, the Walter Reed Army Medical Center, and the Malcolm Grow U.S. Air Force Medical Center at Andrews Air Force Base. There is no monetary compensation or logistical support responsibility requirement for USU or the medical centers; the students will be registered as hospital volunteers. This agreement will allow USU to more effectively market the SOM to prospective applicants and increase awareness about the University. It will also increase familiarity and appreciation for military medicine, while exposing the University to a broader population of medical school applicants.

Electronic Recruitment. The USU recruitment web page continued to evolve during 2001. As part of the HPSP recruitment venture, HPSP links for each of the Uniformed Services have been added to the USU recruitment page. The USU web site lists federal, national, and some regional summer experiences for medical school applicants. Also, a map of the United States has been added to the web site which includes USU SOM student photos and biographies, designates their respective states, and references their undergraduate institutions.

USU Preparatory Program. The University began its one-year Preparatory Program on August 9, 1999; the new Program successfully completed its second year during 2000. Three individuals were accepted into the Program during 2001. The Preparatory Program is modeled after current civilian post-baccalaureate programs, while maintaining compliance with federal laws and restrictions. The Program is much like those presented in the Service Academy Preparatory Schools. Through the Preparatory Program, USU identifies students who would benefit from a year of medical school curriculum; if the Preparatory Program students excel in the selected first-year medical school courses which are taken along with the first year USU SOM students, they are then allowed to reapply for admission to the medical school. Students considered for the Preparatory Program must meet the same admissions criteria and physical and security standards required of all USU medical students prior to matriculation. The goal of the Preparatory Program is to increase representation at USU of economically or educationally disadvantaged students and to especially include current active duty enlisted and commissioned officers. The two students who entered the Preparatory Program during 1999 were fully accepted by the USU SOM and are now in their second year of medical school. Both are performing quite well academically with a graduation date of 2004; they were also the first U.S. Public Health Service students to enter the USU SOM since 1995. The Office of ORD prepared documentation to justify the Program as a permanent USU program, to include manpower billets and funding; the documentation was submitted to the USU Executive Committee for review during 2001.

Community Involvement and Student Support Programs. Members of the USU Student National Medical Association (SNMA) Chapter and Women in Medicine and Science (WIMS) sponsored meetings and activities throughout 2001. Dinner socials provided SNMA and WIMS members with an opportunity to socialize and network with faculty and physicians in a relaxed atmosphere and to discuss significant issues such as residency selections, physician and patient expectations, professional demands in the military setting, effective time management, stress management, and societal minority and gender issues.

Also during 2001, the USU medical students continued weekly and/or monthly trips to public schools to discuss medicine and the medical profession with the public school students through a community outreach program entitled the Youth Science Enrichment Program (YSEP) which is designed to motivate American youth toward medical, scientific, and military careers. The objective of the visits by the USU students is to strengthen the educational pipeline between public schools and advanced education, and to especially encourage careers in uniformed medicine. The USU students familiarized the public school students with such topics as the human skeleton, first aid care, to include bandaging and braces, and medical triage based on the severity of injuries and potential scenarios. The students are divided into teams of two, and each team prepares a classroom presentation. During 2001, specific topics included health maintenance (brushing teeth, etc.), personal safety (wearing seat belts and bike helmets), preventative measures (hazards of smoking and drug abuse), and environmental awareness (insects and reptiles). Additionally, the Youth Science Enrichment Program (YSEP) Committee, under the leadership of the USU SNMA, is coordinating community support for the Washington, D.C. public schools through visits and seminar presentations. The USU YSEP is committed to serving as a role model for young Americans and to establishing a lasting and positive impact on the young, public school students within the neighboring communities.

The Helping Hands Project.

Four days a week, USU medical students and USU physicians continue to find time to provide family health care to low-income families in the Washington metropolitan area, citizens who would not otherwise have access to medical treatment.

- Office of University Recruitment and Diversity Affairs update on community support activities, dated February 2002.

Each week, USU medical students, USU physicians, and USU Graduate School of Nursing students find time to serve in the free clinics and to help provide medical care to low-income families in the Washington metropolitan area. These are citizens who would not otherwise have access to medical treatment. This community free medical care occurs through the student led "Helping Hands Project" volunteer program. The Project includes three clinics located in Maryland and run by the Mobile Medical Care, Inc. The clinics are located at the KenGar First Baptist Church in Kensington; the Shepherds Table at the First Baptist Church of Silver Spring; and, the Adventist Community Center in Takoma Park. The three clinics provide services such as physical examinations, laboratory analysis, the management of acute and chronic diseases, mental health problems, general health concerns, and referrals for X-ray examinations and specialty and secondary care.

The mission of the Project is to ensure that people receive stable family health care when they would otherwise be unable to afford it. No one is turned away. The USU students become acquainted with available community resources and learn of the health care needs of a diverse population of patients. USU students take patient histories and present them to physicians; they assist in examinations, and, in general, observe the attending doctors. The patients are treated for chronic problems such as hypertension, depression, arthritis, and diabetes; the students also observe the care provided to acute-care patients. Depending on the clinic, students assist with six to fifteen patients during their three-hour shifts. Mobile Medical Care Inc. has been so pleased with the performance of the USU students, that a request was made for the students to volunteer four, as opposed to two, days per week. Student volunteers are exposed to people from different backgrounds who have varying requirements, with limited ability to pay for services. The Helping Hands Project developed into the current program largely due to the vision of a student organizer, **Raymond J. Legenza**, a 1996 USU SOM graduate. The Office of Recruitment and Diversity Affairs takes great pride in sponsoring this program; the essential physician support is volunteered by the exceptional faculty of the USU SOM Department of Family Medicine. Helping Hands has become a significant USU program: it encourages a meaningful contribution of essential health care by USU faculty and students to their neighboring communities; and, it provides a tremendous experience for the USU students.

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The Office of the Brigade Commander. The USU Brigade Commander is recognized as the "senior active duty officer" of the University and reports directly to the President of USU. It is the responsibility of the Brigade Commander to ensure that the uniformed personnel assigned to the University adhere to the appropriate service specific standards set by their parent services. In addition, the Brigade Commander assures that the interests of the military members assigned to the University are addressed and that they remain competitive for promotion with their service peers. Under the leadership of the Brigade Commander, the uniformed students, faculty, and staff assigned and reporting to the School of Medicine (SOM), the Graduate School of Nursing (GSN), the Graduate Education Programs, or other USU activities, programs or divisions must participate in all activities and events as they would in any other command of the Uniformed Services. Regular formations are held; physical fitness exercises, standards, and testing are adhered to; performance evaluations are completed and rated; and, uniformed personnel are trained in the appropriate uniformed programs and customs.

A Multi-Service Environment. The USU Brigade provides a clear chain of command for all uniformed members, thus allowing individuals to rapidly assimilate into their new units and the multi-service environment of USU. The Brigade Command structure includes a Commandant for both the SOM and the GSN. The SOM has three company commanders representing the Army, Navy, and the Air Force; they are specifically assigned to USU to provide for military training in officership and leadership. A United States Public Health Service officer is also responsible for providing this special training to the Public Health Service students. The company commanders are mentors for the students and they deploy with them during each of the University's field training exercises. The USU uniformed faculty and staff also conduct service-unique and combined inspections and military formations. Similar to the Service Academies, each student class also has its own military command leadership structure. The students rotate positions among the class members, which increases individual exposure in the management of specific assignments, duties, and "command" roles. Tactical senior medical non-commissioned officers are also assigned to each student company to provide mentorship and to assist the company commanders with officership training.

Establishment of the Office of the USU Chaplain. In July of 1999, the Navy Surgeon General approved the resourcing of billets for a Navy chaplain and an enlisted assistant at the DoD joint command of USU. The arrival of the chaplain and his assistant as the first permanently assigned ministry team at USU filled a void in pastoral care that existed since the foundation of the University. Following the establishment of the Office of the USU Chaplain within the Brigade Command, essential counseling and guidance is now available and provided to the USU students and assigned staff.

The mission of the Office of the USU Chaplain is to support and enhance the quality of life of the USU military personnel, to include their families, through spiritual development, as needs are identified and requested. The Office facilitates the free exercise of religion for USU military personnel and their families. Chaplain ministry is needs-based, performed cooperatively, and executed within a pluralistic environment. Faith-specific Student Associations are formed as needs are identified. USU Faculty and staff are encouraged to participate in the Student Association of their choice and to support and/or mentor the students in their spiritual formation in a similar manner as guidance is provided for the development of academic skills. Within regulations under the University President and the Brigade Commander, and administered by the Office of the Chaplain, the Student Associations are self-governed to meet the specific needs and interests of their constituents. The areas of Ministry are: 1) Pastoral Care (to include prayer, scriptures, insight, listening, encouragement, and support); 2) Pastoral Counseling (provision of individual, marriage and family counseling on moral, ethical, emotional, spiritual, or faith issues); 3) Pastoral Visitation (ministry of

presence at the University, visitation of the hospitalized and confined, pre-operative prayer or counseling, as requested); 4) Spiritual Direction (integration and guidance provided to an individual for spiritual development); 5) Observance of Religious Rites (religious observances, command functions, memorial services and social activities); 6) Classes and Seminars (discussions in the areas of value formation, ethical decision-making, bioethics, and faith related topics); 7) Literature Ministry (provision of devotional, inspirational, and self-help literature); 8) E-Mail (communication of the thought for the day and weekly inspirational thoughts); 9) Referral Service (assistance in locating a place of worship, military or civilian, and counseling referrals for requested guidance outside of the Chaplain's expertise); and, 10) Field Exercises (provide worship services, training, and ministry in the field environment for students and staff).

Development of International Relationships. During 2000, the USU Brigade Commander initiated a dialogue with the Commander, German Armed Forces Command USA and Canada, which resulted in the USU students and faculty being provided the opportunity to compete for the prestigious German Troop Duty Proficiency Badge. Upon completion of the demanding psychological and physical requirements that must be met in order to earn the Proficiency Badge, USU students are authorized to wear this award on their service dress uniforms. Although U.S. Servicemembers can earn the badge while stationed in Germany, this is the first time U.S. Forces were able to earn and wear the badge in the United States. During 2001, after three months of preparation and testing, 54 USU students and two USU faculty members were awarded the German Troop Duty Proficiency Badge on April 11, 2001, in a ceremony presided over by **German Brigadier General Hans-Georg Atzinger**. This was the first time a U.S. Armed Forces Medical Unit has been awarded this prestigious German award which recognizes excellence in physical fitness and readiness. In order to earn the badge, individuals had to achieve significant performances in the following areas: shotput; long jump; sprint; swimming; marksmanship; distance running; and, a 20-30 kilometer road march.

Assurance of Operational Skills. The Brigade's Operations Department provides the planning, coordination, and logistical support for the USU military field training exercises for the first and fourth year medical students. The development of plans continued during 2001 for the major exercises at the University: 1) January 22-26, 2001 - **Operation Bushmaster III-01** at Camp Bullis, Texas; 2) June 28 - July 1, 2001 - **Operation Kirkesner** at Marine Corps Base Quantico, Virginia; 3) September 17-21, 2001 - **Operation Bushmaster I-02** at Bethesda, Maryland; and, 4) November 12-16, 2001 - **Operation Bushmaster II-02** at Camp Bullis, Texas. The first Operation Bushmaster of the 2001-2002 Academic Year was of particular note. It was originally scheduled to begin the week following the terrorist attacks on The Pentagon and the World Trade Center. Despite a large portion of all USU Operations personnel having already traveled to Camp Bullis as an advance party and another portion of the USU SOM Department of Military and Emergency Medicine deployed in response to the attacks, the entire Bushmaster scenario was rewritten to conform to available space on the USU campus; all necessary logistical support was reconfigured with local assets to begin, as scheduled, just six days after September 11, 2001. Through training such as Operations Kirkesner and Bushmaster, USU encourages each uniformed student to develop and maintain the special skills required to earn a leadership position in military medicine (these events are further described in Section II).

During the Summer of 2001, the USU Brigade Commander reported that the second year medical students had participated in the following activities: **Army** - U.S. Army Airborne School; Mountain Warfare

School; clerkships at the Army Surgeon General's Office; Operational Emergency Medical Skills Course; Expert Field Medical Badge; and, USA Operational Units (e.g., Fort Bragg, Fort McCoy, Fort Carson, Fort Riley, and Vicenza, Italy); **Navy** - Diving School; Aerospace Medicine (USS Roosevelt); USN SEALS; Top Gun; Mountain Warfare Training; Amphibious Warfare School; Neuroanatomy Computing; USNS Mercy Hospital Ship; the USN Special Warfare Detachment; Tropical Medicine Course, Brazil; and, Sigonella, Italy; **Air Force** - Operational Emergency Medical Skills; Top Knife; Expert Field Medical Badge; Mountain Warfare School; and, USAF Hospitals and Research. From qualifying for the Expert Field Medical Badge to conducting undersea medical research with the U.S. Navy SEALS, USU students are developing and maintaining the special skills required to assume leadership positions in uniformed medicine. Additionally, the diverse and exciting training USU students complete during summer training helps the University to accomplish Strategy 6.4.2 of the USU Strategic Plan: "USU faculty, staff, students, and alumni, both on-site and off-site, will be provided information relevant to their career enhancement, mission, and interests."

The Brigade Headquarters Company is the enlisted Brigade Command support element for USU. In addition to the performance of their military occupation specialties during normal duty hours, the enlisted members of the Headquarters Company ensure that equipment, supplies, transportation, and personnel are positioned to accomplish all major field exercises per year. The Brigade is responsible for ensuring that the enlisted personnel at USU are proficient in their operational support skills which enables them to remain competitive for promotion.

Orientation Responsibilities. Another responsibility of the Brigade, during the first quarter of each Academic Year, includes the in-processing requirements for all uniformed students, whether they are matriculating into the SOM, GSN, or the Graduate Education Programs in the SOM. In the case of the 165 first-year medical students for Academic Year 2001, Brigade letters were issued to the incoming students to include a detailed calendar of events outlining their in-processing week. This increased level of detail facilitates the orientation process and eliminates students' concerns over appropriate uniform, classroom, and Brigade requirements. The military aspects of the USU were stressed during the first week, as well as the students' responsibilities in their primary role as military officers.

Recruitment Efforts for Underrepresented Communities. The Brigade continued to reach out to the ROTC and underrepresented communities during 2001. The Brigade's recruitment efforts during 2001 included presentations on the value of a USU medical education at the following universities: the University of Arkansas at Little Rock and at Conway, Arkansas; the University of Missouri; and, the University of Mississippi. The membership of **Charles S. Serio, COL, MS, USA, USU Brigade Commander,** on the Medical Advisory Selection Committee at West Point continues to give USU exposure to some of the top military academy students in the country.

USU Color Guard. Formal ceremonies have continued to be an important element of military tradition since the earliest armies and navies entered combat. Whether at a retirement, change of command, or a unit stand-up, the military goes to great lengths to showcase its command, its people, and its pride in the Nation. Color guards have long been an important part of these ceremonies, and USU is carrying on that tradition, forming its own color guard in 1997. The USU Color Guard is comprised of enlisted members (E-5 and below) from the Army, Navy, and the Air Force. The first major performance of the USU Color Guard occurred at the 1997 USU Graduation; the colors were also presented during the USU Brigade Change of

Commander Ceremony in 1998. During the May graduations from 1998 through 2001, the USU Color Guard brought the colors on stage during the commencement ceremonies which were held at the National Society of Daughters of the American Revolution Constitution Hall in Washington, D.C. Also, during 2001, the Color Guard performed at the annual USU Dining-In and Dining-Out ceremonies.

Officer Indoctrination Training of USU Matriculants. Formal studies were initiated in 2001 to assess the value of conducting a basic officer indoctrination course on the USU campus for all Army, Navy, and Air Force matriculants to the USU SOM. At the present time, the Surgeons General spend approximately $500,000 per year to transport and house USU non-prior-service Navy and Air Force matriculants and all of the USU Army matriculants so that they can attend their service-specific officer indoctrination courses prior to their arrival at USU. Because of the time constraints which occur due to the timing of college graduation, the notice of final acceptance by USU Admissions, and the receipt of official military orders, some of the USU matriculants have been unable to attend these courses prior to their arrival at USU. Due to the USU requirements for military training during the Summer following the first year of medical school, it is almost impossible for those students who miss their indoctrination courses to make them up without impacting on their medical education requirements. The Brigade currently proposes to investigate the efficiency of having all USU matriculants attend a USU TriService Indoctrination Course to be held at USU during July and August prior to the Brigade orientation and class initiation activities. Topics which are applicable to all Services would be held in a large lecture room, while service-specific topics would be held in smaller USU classrooms. Faculty from USU could be augmented with temporarily assigned instructors as required by each of the present course coordinators. Incoming students would no longer be required to travel elsewhere prior to their arrival at USU which would accommodate the location of housing for themselves and their families prior to course commencement. Although cost-savings would be partially offset by temporary travel and housing for the visiting faculty, the overall savings would still be significant. In addition, each incoming class would have the opportunity to develop a strong sense of esprit de corps prior to the beginning of classes.

This effort would fall under Strategy 6.4.2. of the USU Strategic Plan since USU would be providing an additional level of military educational training specifically for the USU SOM students. Goal 3 of the USU Strategic Plan, "we will optimize resources to efficiently and effectively implement USU core capabilities," supports the proposed USU effort to coordinate with each of the Services to generate cost-effectiveness for the administrative and financial aspects of the current process for USU SOM student indoctrination.

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Goal 6 of the USU Strategic Plan includes a requirement for the University to establish an enhanced sense of intramural community. The Combined Federal Campaign is one event which crosses all boundaries within the University and unifies the entire USU community through a common goal of sharing with those who are in need, either in our own community or on a global scale.

USU Exceeds Established Goals for the Combined Federal Campaign. From 1997 through 2001, the University has reached its Combined Federal Campaign (CFC) goal due to the tremendous efforts and coordination of the Office of the USU Brigade Commander. Under the leadership of the USU

Campaign Managers, the total contributions reached over $167,823. Approximately 66.4 percent of the USU staff, students, and faculty contributed to the Year 2001 Campaign for worthy community, national, and world charities. **The Year 2001 marks the fifth consecutive year in which the University exceeded its goal.**

USU also earned the 2001 CFC Chairman's Award for attaining 100.5 % of its goal of $167,000. In doing so, USU had a total of 53 Eagle donors (42 single Eagles with contributions representing at least one percent of the employee's salary; and, 11 double Eagles). In addition, the University was awarded the Best Goal Poster Award in the 2001 CFC Communications Contest; **Ms. Sofia del Castillo, USU Audio Visual Center,** submitted the winning poster. The average gift during 2001 was $263.00. In all, the Department of Defense raised a record total of $12,429,513, exceeding its annual goal for 2001 by over one million dollars.

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The Year 2001 Curreri Award.

Background. Following his retirement as the University President in November of 1976, **Anthony R. Curreri, M.D.,** was awarded the Department of Defense (DoD) Distinguished Public Service Award. The DoD award, presented in 1977, cited Dr. Curreri for "collaborating with the military departments and for the development of the overall objectives and goals of the University to develop and implement an educational system of the highest quality to serve the physician manpower needs of the military services." The 1996 Graduating Class of the School of Medicine established the Curreri Award to both recognize exceptional contributions to the continuation and well being of the University and to memorialize the leadership of Dr. Curreri as USU's first President. Since the initial award in 1996, all of the graduating classes (SOM, GSN, and Graduate Education) have participated in selecting the recipients of this award.

Recipients of the Curreri Award:

1996 - Vorley M. (Mike) Rexroad, BG, U.S. Air Force, (Retired);

1997 - John Dressendorfer;

1998 - Lorraine B. Sanford;

1999 - Charles C. Partridge, COL, USA, (Retired);

2000 - Enrique Mendez, Jr., M.D.

2001 - Frederic G. Sanford, M.D., RADM, MC, USN, (Retired)

Frederic G. Sanford, M.D., RADM, MC, USN, (Retired) Receives the 2001 Curreri Award. On May 11, 2001, the USU graduating classes awarded the 2001 Curreri Award to **Frederic G. Sanford, M.D.** The award recognized Dr. Sanford for his tremendous and dedicated support for USU. Dr. Sanford has been

a long-time supporter of the University and has given much of his personal time and energy to advance its welfare. He continues to identify funding for the SOM students to travel to a variety of national meetings; and, he actively promotes the mission and accomplishments of the University through highly visible venues. Of particular note, is Dr. Sanford's coordination of a $100,000 donation from the Association of Military Surgeons of the United States (AMSUS) for the USU Simulation Center's Virtual Reality Laboratory. Dr. Sanford has more than 30 years of experience in military medicine. His military decorations include the Legion of Merit with five gold stars, the Meritorious Service Medal, the Combat Action Ribbon, and other campaign awards. He has served in command and senior staff positions, to include: Commanding Officer, Naval Hospital, Newport, Rhode Island; Commanding Officer, Naval Hospital, Long Beach, California; Naval Medical Inspector General; Medical Officer of the Marine Corps; and, Commander, Naval Medical Center, Oakland, California. Immediately prior to his second tour as the Navy Inspector General, Dr. Sanford served as the Assistant Chief, Operational Medicine and Fleet Support, Bureau of Medicine and Surgery, Washington, D.C. He is certified by the American Board of Radiology; and, in September of 1986, was inducted into the Fellowship in the American College of Radiology. The USU community considers it to be a reflection of great credit upon the University when an individual, such as Dr. Sanford, has demonstrated such on-going appreciation and support for the USU mission and educational programs.

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The 2001 Packard Lecture.

Background. The Packard Lecture Series was named in honor of **The Honorable David Packard** (September 7, 1912 - March 26, 1996), distinguished friend and supporter of the University. Mr. Packard was the Deputy Secretary of Defense when USU was created in 1972. He served as the first Chairman of the USU Board of Regents; and, he was the Acting President of the University from 1976 to 1981. Mr. Packard also served as the first Chair of the Council of Directors of the Henry M. Jackson Foundation for the Advancement of Military Medicine for over six years. The USU Faculty Senate established the Packard Lecture in 1985 to annually honor individuals who have made significant contributions to the military medical community; it is considered among the greatest honors bestowed by the USU faculty.

The David Packard Lecture Series:

1985 Enrique Mendez, M.D.	**"Teaching Humanism to Medical Students"**
1986 Joshua Lederberg, Ph.D.	**"The Complexity of Biological Systems"**
1987 C. Everett Koop, M.D.	**"The Fight Against AIDS"**
1988 Robert Petersdorf, M.D.	**"Some Issues in Graduate Medical Education"**
1989 ADM James Watkins, USN	**"AIDS, The Political, Ethical and Social Aspects"**
1990 Arnold Relman, M.D.	**"Scientific Misconduct"**
1991 VADM James A. Zimble, MC, USN	**"Navy Medicine Goes to War, A Time For Evaluation, Reflection and Discussion"**

1993	**Philip R. Lee, M.D.**	**"Re-Inventing Public Health"**
1995	**David A. Kessler, M.D.**	**"Accelerating Approval for Drugs for Serious and Life Threatening Diseases"**
1996	**Joseph A. Califano, Jr.**	**"Radical Surgery: What's Next for America's Health Care"**
1997	**Michael DeBakey, M.D.**	**"History, the Torch that Illuminates Lessons from Military Medicine"**
1998	**Francis D. Moore, M.D.**	**"New Kinds of War: New Kinds of Peace"**
1999	**Senator Nancy Kassenbaum Baker**	**"The Federal Advisory Committee on Gender Integration Training and Related Issues"**
2000	**David P. Stevens, M.D.**	**"The Future of Medical Education: Bytes, Ticks and Finding Your Way"**
2001	**Wayne T. Hockmeyer, Ph.D.**	**"Perspectives in Biotechnology"**

The 2001 David Packard Lecture Features Wayne Hockmeyer, Ph.D., COL, MSC, USA (Retired). The President of the USU Faculty Senate, **Richard M. Conran, COL, MC, USA, Professor, USU SOM Department of Pathology**, reported that one of the significant highlights of the Faculty Senate during 2001 was its sponsorship of the 2001 Packard Lecture which featured **Wayne Hockmeyer, Ph.D., COL, MSC, USA (Retired).** On June 28, 2001, 220 members of the USU faculty and staff attended the David Packard Lecture. Dr. Hockmeyer, founder and current Chairman of the Board of Directors of Medimmune, Inc., the fourth largest biotechnology company in the United States, delivered a lecture entitled "Perspectives in Biotechnology." The lecture presented a myriad of insights into the biotechnology field, to include the difficulties encountered in the process which follows discovery to the marketing of a product. The 2001 Packard Lecture was well received and considered to be most relevant by the USU community.

Dr. Hockmeyer earned his Bachelor's Degree from Purdue University and earned his Ph.D. from the University of Florida in 1972. He served as a commissioned officer in the United States Army from 1966 to 1986. From 1980 to 1986, he was the Chairman of the Department of Immunology at the Walter Reed Army Institute of Research. In 1986, Dr. Hockmeyer joined Praxis Biologics as the Vice President of Research and Development and was there until the founding of Medimmune, Inc. In 1988, Dr. Hockmeyer was recognized internationally for his research on malaria vaccines; he has authored more than 70 papers and articles in the fields of immunology and vaccine development.

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The 2001 USU Faculty Senate Research Day and 8th Graduate Student Colloquium - Emerging Research Technologies. The 8th Annual Graduate Student Colloquium and Research Day 2001 were held at USU on April 10 - 11, 2001. This year's theme was "Emerging Research Technologies." The two-day event brought approximately 250 individuals to the University; attendees included researchers from the Armed Forces Radiobiology Research Institute (AFRRI), the Center for Prostate Disease Research (CPDR), the National Naval Medical Center (NNMC), the Walter Reed Army Medical Center (WRAMC), and the Walter Reed Army Institute of Research (WRAIR). A total of 34 panelists and 144 posters made up a full two-day program; researchers from numerous Washington, D.C. institutions served on seven panels; and, nine concurrent poster sessions were also held. Topics included infectious diseases, operational medicine, combat casualty care, space medicine, cancer research, neurology, endocrinology, cardiovascular research, behavioral research, and health promotion and education. The Year 2001 brought the addition of three pre-meeting workshops on issues related to: conducting biomedical research at USU; emerging questions on the transfer of technology from research to licenses and patents; compliance with the evolving Federal regulations on human and animal research; and, career development strategies for students graduating in the 21st Century. All three workshops drew sizeable audiences; similar workshops are planned for 2002.

The awards banquet, held on April 11, 2001, was attended by 245 individuals. The ceremony was opened with remarks by the President of the Faculty Senate, **Richard M. Conran, COL, MC, USA**, and included remarks from the USU President and the Deans of the School of Medicine and the Graduate School of Nursing. **Clifton Dalgard** was awarded a $100 U.S. Savings Bond for designing the Graduate School Colloquium and Research Day 2001 poster. **Rosanne Parsells Waterhouse** (USU SOM Department of Pathology) and **Thomas Ceremuga** (USU SOM Department of Neuroscience) were recognized for the best graduate student poster and platform presentations. Ms. Waterhouse also received the Emma L. Bockman Award, which is presented each year to the USU graduate student who most exemplifies Dr. Bockman's intelligence, generosity, and intellectual curiosity; **Brenda Elliot** (USU SOM Department of Medical and Clinical Psychology) received Honorable Mention. The John F. Maher Awards for Research Excellence, awarded annually to two junior members of the Department of Medicine, were presented to **Paul Hemmer, MAJ, USAF, MS** (Research), and **Thomas M. Herndon, Capt (P), MC, USA** (Teaching). Both Major Hemmer and Captain Herndon are Assistant Professors in the SOM Department of Medicine. Finally, in recognition of the University's appreciation for his extraordinary service as the Acting Vice-President for Research from April 2000 through February 2001, **Michael N. Sheridan, Ph.D., Associate Dean for Graduate Education**, was presented with the USU Distinguished Service Award. Dr. Sheridan, scheduled to retire in December of 2001, also received recognition during the Graduate Student Colloquium for his many years of dedication and superb service as a Professor of Anatomy and for his leadership as the USU Associate Dean for Graduate Education.

The keynote speaker was **Olli-P. Kallioniemi, M.D., Ph.D., Chief of the Cancer Genetics Branch, National Human Genome Research Institute, National Institutes of Health**. His presentation, "Biochip Technologies for High-Throughput Cancer Research in the Post-Genome Era," provided an informative discussion on the current technology for DNA analysis. Plenary lectures were presented by **David Jacobowitz, Ph.D., of the National Institute of Mental Health and USU SOM Department of Anatomy**, and, **P. Paul Liu, Ph.D., National Institutes of Health**; they addressed "Gene Discovery in Developing and Degenerating Brains" and "Genetic Analysis of Leukemogenesis and Hematopoiesis in Animal Models."

Roy Curtiss III, Ph.D., George William and Irene Koechig Freiberg Professor of Biology, Washington University, St. Louis, Missouri, Presents the 2001 John W. Bullard Lecture. The Graduate Student Colloquium consisted of oral presentations by six graduate students from Departments and Programs within the University. Following the platform portion of the Graduate Student Colloquium, **Dr. Roy Curtiss III, George William and Irene Koechig Frieberg Professor of Biology, Washington University, St. Louis, Missouri**, presented the John W. Bullard Colloquium Lecture entitled "Salmonella: Our Enemy And, In Some Forms, Our Friend." After Dr. Curtiss' presentation, students and faculty gathered for informal conversation and discussion, followed by a Plenary Session in the Sanford Auditorium.

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TEACHING AND RESEARCH SUPPORT

Re-Designation of Support Activities. The nine activities organized under the Office of the USU Vice President for Teaching and Research Support (TRS) were originally established as part of the School of Medicine (SOM). As the University's activities and programs expanded to include the Graduate School of Nursing, Continuing Education for Health Professionals, and the Armed Forces Radiobiology Research Institute, it became apparent that the central support functions of TRS were no longer limited to the SOM. As a result, the TRS activities were moved from responsibilities designated to an Associate Dean of the SOM, to that of a University Vice President. As this evolution occurred, it was also determined that these activities should be called Centers to more accurately reflect their missions as central resources for USU. The nine TRS Centers include: the Audio Visual Support Center; the Biomedical Instrumentation Center; the Center for Informatics in Medicine; the Center for Environmental Health and Occupational Safety; the Center for Laboratory Animal Medicine; the Learning Resource Center; the Center for Multidisciplinary Services; the Pharmaceutical Supply Center; and, the Information Services Management Center.

The Audio Visual Support Center.

Pictures, presented as a visual communications medium, make the abstract more concrete, show unique perspectives, form or alter opinions and attitudes, convey and invoke emotion, develop appreciation, awareness, and understanding, and motivate actions.

- Roy Paul Madsen, The Impact of Film: How Ideas Are Communicated Through Cinema and Television, MacMillian Publishing Company Inc., New York, New York, 1973.

The USU Audio Visual Center (AVC) functions as an essential teaching and research support resource for the USU faculty and staff; it provides support through computer graphics, still photography, video, multimedia products, and consultation services. The Medical Photography Branch provides professional photographic services to include: patient photography in a clinical setting; gross specimen photography for Pathology and Anatomy studies; documentation of research projects; and, coverage of University events and public affairs programs. Services provided by the Photographic Laboratory include: custom printing; film processing support; digital image enhancement; traditional slide duplication; flat art copy; small object studio subjects; and, portraiture services. The Computer Graphics Branch provides the following graphic art services: charts; graphs; text for medical/scientific information in journal publications; poster session displays; and, 35 mm slides for classroom presentation. Detailed original medical illustrations in full color or line drawings are prepared to supplement teaching programs, accompany articles for publication, or illustrate research displayed in poster sessions. Signs, forms, brochures, logos, book covers, folders, and flyers are also produced in support of academic and administrative functions. The Medical Television Branch provides studio and remote video tape recording and broadcast services. Extensive editing, titling, and duplication are provided in support of laboratory demonstrations, field exercise documentation, and classroom lectures. Multimedia and web page design services are also available to enhance course materials and the distribution of University information. Throughout 2001, the AVC has further streamlined its services to more efficiently support the USU mission. In doing so, AVC has eliminated all chemical photographic processing through the acquisition of additional digital cameras and printers; it has also

established contracts with the private sector for those remaining projects requiring chemically-based processing. All AVC Branches have supplemented their digital infrastructure through faster and more powerful digital production equipment and software. These modifications have enabled AVC to provide its USU customers with dynamic multimedia and interactive products.

Archive for Historical Images. Throughout 2001, TRS, in conjunction with several USU activities, has initiated the development of a digital archive of historical images for the University. An annotated database of USU's historical images has commenced with significant images related to the University's Board of Regents. As it is expanded, this database will provide a permanent record of those images which capture USU's historical events beginning with its establishment through the maturation of the University.

Center for Multidisciplinary Services.

On-Going Renovation and Upgrades in Support of the Teaching Mission. By 1996, the USU Center for Multidisciplinary Services (MDL), the USU Faculty Senate, the Offices of the Deans of the SOM and GSN, and the USU President were aware that the teaching tools available in the lecture halls and auditorium required major renovation. Based on surveys of students, faculty, and staff, an engineering design was commissioned to upgrade the equipment; the project was then expanded to include the replacement of both carpeting and seating. The Office of the Vice President for Teaching and Research Support and MDL successfully coordinated a major renovation of the Sanford Auditorium and the USU lecture halls during 1998 and 1999. Since then, during 2000 and 2001, subsequent upgrades of the teaching facilities have been on-going, to include a major purchase of tables and chairs for the teaching classrooms in September of 2001. All of these activities are in compliance with Goal 1 of the USU Strategic Plan. By upgrading the lecture halls, classrooms, and the auditorium, USU has enhanced its ability to: provide a quality educational environment for its students, faculty, and staff; conduct continuing medical education; and, sponsor military medical conferences for the MHS in a manner "that will enhance the reputation of USU as a premier health sciences academic institution."

Conformity of Design. All of the USU lecture halls have been designed with the same equipment and controls so that instructors and students can learn one system and move from one lecture room to the next without readjusting to unfamiliar teaching tools. The upgraded equipment provides the faculty with a broader range of teaching tools to present their material. On-going upgrades include: 1) the installation of upgraded audio and projection equipment; 2) the provision of computer capability and Internet access; 3) enhanced video capabilities in each room, to include in-house cameras for overflow viewing throughout the campus; and, 4) "smart" classroom capabilities in Lecture Room C, to include video-teleconferencing and a state-of-the-art audience response system. A majority of the upgrades took place during the summer of 1998; equipment installation occurred around class schedules throughout 1998 and 1999. Similar upgrades were also planned for the Board of Regents Conference Room, selected conference rooms throughout the campus, and the Multidisciplinary Laboratories. In September of 2000, resources were identified to obtain computer and video projector equipment to upgrade the major USU conference rooms with systems similar to those available in the lecture halls; this upgrading process continued throughout 2001. All of the above described efforts are increasing interactive instruction throughout the University.

Renovation Efforts Are Completed in the Anatomical Teaching Laboratory. In 1998, it was identified that the working and storage areas and the freezers in support of the Anatomical Teaching Laboratory (ATL) required significant renovation. Following coordination with the Vice Presidents for Administration and Management, Resource Management, and Teaching and Research Support, funding was identified in September of 2001 for the renovation of the working and storage areas and the replacement of the ATL freezers. Following extensive consultation and planning by the USU Facilities Division, the Anatomical Curator, and the Navy Public Works Center, the renovation project began in December of 2001, and was successfully completed during 2002.

Computer Upgrades for the Teaching Laboratories. In the past, the University utilized oscilloscopes and chart recorders to facilitate the teaching of physiological changes due to disease and treatment in the first-year teaching laboratories. These units were failing and replacement equipment was becoming increasingly unavailable. Following the identification of the need to replace the twenty-five-year-old system, MDL planned, justified, secured funding for, purchased (during 2000), and installed (during 2001) a system of computer-based teaching workstations at each first-year laboratory table. Since the installation of the computers in the teaching laboratories, the USU SOM Department of Anatomy, Physiology and Genetics (APG) has utilized the new resource for laboratory exercises. The students learned to monitor their heart rates and to run a series of experiments studying the changes in heart rates. Once students had become familiar with the basic operation of the equipment, it was used in advanced cardiac physiology laboratory exercises. Both of these teaching laboratories were judged to be quite successful by the students and faculty. While the computers were purchased primarily to replace the physiological recorders mentioned above, they have become a source of greatly expanded, computer-assisted, teaching applications in a variety of disciplines. For example, because of the powerful nature and adaptability of these new tools, the MDL received requests from Biochemistry, APG, Neuroanatomy, Microbiology, Pharmacology, and Radiology for the expanded use of this equipment in their laboratory exercises. Through the utilization of the centralized and networked controls of this computer system, a wide variety of demonstrations, laboratory simulations, experimental exercises, and testing procedures are currently being used, or are under development for expanded use, by multiple SOM Departments. Additionally, this equipment is planned for use in computer-based testing applications. These demonstrations, simulations, exercises, and procedures have been found to provide cost-effective, true-to-life, experiences for students which were not formerly available; and, they have been so successful that plans have been made to duplicate the system throughout the second-year student laboratories.

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The Learning Resource Center - Globally Available.

A trip through the Learning Resource Center is likely to reveal an MS-I student reviewing Anatomic-Radiological correlation, an MS-II studying Pathology images or perusing the HyperPharm program, and an MS-III clerk accessing clinical information via university-provided 'MDConsult' or Medline search. SOM students are well-prepared to enter the new age of medical informatics.

- School of Medicine Self-Study, Section IV, page 5, submitted during 1999.

World-Wide Access for Health Sciences Information. The USU Learning Resource Center (LRC) continued, throughout the Year 2001, to ensure that its electronic resources were globally accessible over the Internet. The LRC assisted thousands of customers in making the best use of current, medically-related information. Unique gateway software enabled users to access on-line medical information from Kosovo, Japan, Korea, Iceland, Bosnia, Germany, Italy, Spain, the United Kingdom, Turkey, Greece, Saudi Arabia, on board ships traveling around the world, and sites located throughout the United States. The MD Consult System was accessed by nearly 6,000 registered users during 2001. Selected examples of the LRC customer base include: physicians; all four classes of USU medical students; USU alumni; Graduate School of Nursing students; distance learning students; USU faculty both on and off campus; residents, nurse practitioners, and registered nurses throughout the Military Health System (MHS); and, the Office of the Secretary of Defense. **During the Year 2001, those 6,000 users requested 3.5 million pages from the LRC Remote Services.** The LRC home page with its numerous information services is available over the Internet 24 hours a day, every day of the year.

Reliability and User-Friendly Access.

A variety of space is available for student study at the school. The LRC is a favored site because many different types of study space and equipment are convenient to the students. There are 10 study rooms for individual or group study in the LRC. In the Spring and Fall, students can also study at tables and benches located on the second and third floor patios of the LRC. Since the 1993 LCME self-study and site visit, the number of private study carrels in the LRC has been increased from 18 to 64. Almost 90 PC and Macintosh computers, with computer-based educational software programs developed either commercially or on-site, are now accessible in the LRC for students to use while learning, reviewing and self-testing information. A training classroom in the LRC with 40 computers can also be reserved for student testing and/or review.

- School of Medicine Self-Study, Section VI, page 6, submitted during 1999, updated in January of 2002.

Since its establishment, the LRC continues to diversify and update its resources to meet its customers' changing requirements. For example, before a new information resource is moved to the production Internet servers for customer access, thorough validation reviews are conducted to ensure reliability and

user-friendly access. The LRC has continuously succeeded in providing an outstanding learning environment and state-of-the-art educational tools for the USU students and faculty.

Internet Information Resources During 2001. During the past several years, the scope of the LRC Internet services was expanded to ensure the equivalent of a major medical library. Customers now have access to a one-stop information center, particularly those alumni located at remote sites where first-line patient care must be provided. The following examples reflect the LRC's continuously expanding services during Fiscal Year 2001:

1) **Books.** Electronic editions of standard textbooks were added as soon as they became available. Currently, there are more than 90 full-text books available through the LRC. These include such familiar titles as *Harrison's Principles of Internal Medicine, Scientific American Medicine, Cecil's Textbook of Medicine, Current Medical Diagnosis and Treatment, Sabiston's Textbook of Surgery, Conn's Current Therapy, Nelson's Textbook of Pediatrics, Merritts' Textbook of Neurology, Griffith's 5 Minute Clinical Consult, the Washington University Manual of Medical Therapeutics, the Harriet Lane Handbook, Campbell's Urology, and Danforth's Obstetrics and Gynecology.* During 2001, book titles from Ovid and Merck were available; these included the *Textbook of Internal Medicine, Oski's Pediatrics, the 5 Minute Emergency Medicine Consult, the Yamada Textbook of Gastroenterology, the Merck Manual of Geriatrics, the Merck Manual of Diagnosis and Therapy, and the Merck Manual of Medical Information.* Books are also available which cover all of the major medical specialties such as: allergy, cardiology, dermatology, emergency medicine, trauma, endocrinology & metabolism, family medicine, general medicine, gastroenterology, geriatrics, infectious diseases, internal medicine, nephrology, neurology, neurosurgery, obstetrics & gynecology, oncology, orthopedic surgery, pathology, pediatrics, pharmacology, psychiatry, pulmonary medicine, rheumatology, surgery, toxicology, and urology. All of these electronic editions are constantly updated and provide current information for the practice of contemporary health care;

2) **Journals.** Conversion to the electronic editions of health-related journals or periodicals continued throughout 2001. The LRC currently has 5,000 journal titles available on-line in full-text to assist its users. Numerous titles are continuously being added to the Internet production server for the LRC customers. Some examples of these additions include the following: more than 600 titles were added from the Kluwer Collection of on-line, full-text journals; all of the 130 titles published by Academic Press; 50 of the titles published through Highwire Press; the Ovid Journals collections which include 100 titles; journal titles from Adonis, Synergy, Catchword, Ingenta, and Karger publishers; and, the MD Consult which includes 48 titles. Specific titles include the *American Heart Journal, Pediatrics, Journal of Clinical Investigation, EMBO Journal, Blood, American Journal of Physiology, Proceedings of the National Academy of Sciences, Circulation, Circulation Research, American Journal of Emergency Medicine, Journal of Trauma, Neurology, Medicine, American Journal of Obstetrics and Gynecology, Annuals of Emergency Medicine, Annuals of Surgery, Chest, and Critical Care Medicine*, and *Medical Clinics of North America, Pediatric Clinics, Cardiology Clinics, Infectious Disease Clinics, Neurologic Clinics*, and *Surgical Clinics*. All of the Yearbooks covering the various medical specialties were also made available;

3) **Practice Guidelines.** With the addition of MD Consult, over 500 Clinical Practice Guidelines contributed by more than 50 medical societies and government agencies are now available through the LRC; during 2001, plans were coordinated for access to the new MD Consult Cardiology Program;

4) **Patient Education.** More than 2,500 patient education handouts, which can be personalized to include special instructions provided by the attending physician or staff, are available;

5) **Continuing Medical Education.** There are more than 300 Continuing Medical Education (CME) Modules; each offers 1.5 Category I credits, for a total of 450 hours of Category I credit, which can be applied toward the American Medical Association Physicians' Recognition Award. The collection provides practical topical updates across eleven specialties of medicine. Each CME test is enhanced with links to related information contained in the electronic books, journals, practice guidelines, and drug information as well as to other web sites with relevant information;

6) **Clinical Topic Tours.** A new Tour is provided each week which allows the user to explore current thought and accepted wisdom on consequential topics in medicine. Establishing a path through a focused collection of information from journal articles, books, drug information, practice guidelines, educational materials, and useful web sites allows the user to refresh his/her medical knowledge;

7) **Today in Medicine.** This module allows the health care professional to stay informed about the newest developments in medicine. The module provides current developments from all of the major journals, government agencies, and medical conferences. Also provided are concise clinical summaries and links to additional sources of information on the Internet; and,

8) **In This Weeks Journals.** The health care practitioner can keep up with all of the major weekly journals through this module. Key contents of the major clinical journals (Journal of the American Medical Association, the New England Journal of Medicine, the Archives of Internal Medicine, Lancet, etc.) are presented each week in an easy-to-scan format which includes concise article summaries.

Supplementing the Internet Resources. The registered number of users for the LRC remote Internet services continued to expand during 2001. A Reference Services Section is posted on the Internet production servers and currently contains an electronic request form for a mediated literature search as well as an electronic request form for an interlibrary loan for materials not owned by the LRC. During 1998, the LRC installed a flat-bed scanner fax machine to facilitate the transmission of any critical information needs from its printed sources. To facilitate color copying and printing, a full-color imaging system became fully operational during 1998 and was available for use throughout 2001. The LRC continuously works to incorporate the recommendations of its customers in its efforts to provide quality and timely service for the USU community.

Partnership for Peace Information Management Systems. The success of the global use of the LRC resulted in the initiation of a cooperative venture with the Partnership for Peace Information Management Systems (PIMS) during August of 1999. This test project enables access via the Internet to specific medical care information systems for the medical community in the Republic of Georgia; it officially opened for registered users on December 15, 1999. Health care professionals in the Republic of Georgia had access to a selection of clinical medicine journals, books, and databases such as Micromedex and MD Consult throughout 2001. The exchange of health care information is expected to be relevant to the unique preparation of the USU students for operational assignments; outcome assessments will be used in determining the future expansion of this project as resources are identified.

Support to Other Military Medical Libraries and Institutions. In 2001, the LRC entered into, or maintained, cooperative agreements with the Walter Reed Army Institute of Research (WRAIR), the Navy Medical Research Center (NMRC), the Portsmouth Naval Medical Center, the Department of State Medical Services, the Association of Military Surgeons of the United States (AMSUS), the Kadena Air Force Base, the Naval Operational Medicine Institute, and many others, to extend on-line services to health care professionals at a significant cost savings to the MHS.

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Informatics - An Expanding and Essential Component of Education in the Health Sciences.

Background. Efforts in computer-assisted instruction as a study aid for USU students have been ongoing since 1979 when a series of medical students developed, in Apple Pascal, the first drill and practice question bank within the SOM. Course directors provided questions entered into the University Board Review System. In succeeding years, several departments (Biochemistry, Pathology, Pharmacology, and Physiology) developed their own on-line examination archives or examination item databases. Over time, this type of material was delivered to students first on stand-alone computers, then on networked computers (HyperPharm, HyperRenal, and others) and most recently as world-wide web (WWW) based sites accessible both inside and outside of the SOM by the Departments of Biochemistry, Pathology, Pharmacology, and Physiology. Perhaps the most ambitious of these efforts is the Biochemistry question database of examination questions for testing which was developed between 1991 and 1996. This archive is available at *<http://bob.usuhs.mil/biochem/exams/exams-f.html>*.

Image-based study aids have also been developed by the USU faculty. The earliest of these efforts were Radiologic Anatomy, Neuroanatomy, and Chest Film Review laser disc programs developed and deployed between 1985 to 1995 by the Department of Radiology and Nuclear Medicine. In 1996 and 1997, this material was also made available to students as CD-ROMs; and, in 1997, the material was migrated on the WWW at *<http://rad.usuhs.mil>*. The Department of Radiology and Nuclear Medicine has established collaborative efforts with faculty at the Mayo Clinic Foundation and Emory University which provide USU medical students access to the Visible Human data set. Both SOM and GSN students utilize this resource. Another current effort encourages the students to draw correlates between anatomy, physical diagnosis, clinical neurology, and radiology.

MedPix, An Internet Teaching File for the Health Sciences. The USU MedPix System was developed to offer medical students, researchers, and clinicians a descriptive on-line data base housing medical case examples. The intent is to provide a fully-functional archive of clinical photographs and radiologic images, primarily of abnormal and disease conditions. The result has been a shared Internet teaching file filled with a variety of illustrated medical cases available to anyone interested in learning more about an affliction or in sharing information and images from cases they have seen. These cases are further complemented with posted summaries, reports and editorial comments. **James Smirniotopoulos, M.D., Professor and Chair, SOM Department of Radiology and Nuclear Medicine**, and third-year medical student **Ensign Henry Irvine** originated the USU program as a text-only data base with aspirations to develop it into a multi-level program. Instead of using only static web pages, it was decided to use a data base and dynamically generated pages. The intention was to allow its users, at remote sites, to add images and cases into the data base. The site began with a Radiology intent and has since branched off into the Dermatology and Pathology disciplines. Visitors to the site can also practice identifying ailments by selecting a “hide-text” feature. This allows the user the opportunity to take a self-quiz before the introduction to the actual illness. It has become an impressive site in terms of complexity and depth of resources. It is recognized as a powerful teaching tool for residents. In fact, during 2001, Radiology residents used MedPix data for teaching files at such hospitals as the Tripler Army Medical Center, the Naval Medical Center at San Diego, and throughout the National Capital Region. In 2002, the Naval Medical Center at Portsmouth is also expected to utilize this resource. One customer at the David Grant Medical Center, **Captain Jerry Cline, USAF, MC**, has found the site to be “a great resource for medical pictures (especially radiographs) which are easily

downloadable to be used in Powerpoint teaching rounds." Part of his job as a senior resident on the inpatient service was to give daily half-hour lectures to residents and staff. By using the information from MedPix, his "presentations became more interesting and clinically based." Material, organized by disease category, disease location (organ system), and by patient profiles, can be further investigated through multiple internal text search engines. Additionally, visitors may present search formulations which can be sent directly to PubMed, a service of the National Library of Medicine and the National Institutes of Health which provides access to more than 11 million citations from medical and life science journals. According to **Greg Petermann, Program Director, Diagnostic Radiology Program, Tripler Army Medical Center**: "It is a great military achievement to put this on the web. It shows how different parts of the country can work together, using the Internet, and create an outstanding learning resource and tool as our residents use it to look up cases and learn more about radiology imaging. It shows how progressive USU is, and how well we can interact within the military."

Compact Disc Provides Cost-Effective Assistance. The Department of Pathology has digitized its entire 2x2 slide collection, some 1,300 images, used in the MS-II Pathology Course; the images are available to students via the WWW. The Pathology Department has developed a compact disc of approximately 1,000 photographic images of pathological specimens. Directed to second-year medical students, the compact disc provides assistance for preparing for pathology laboratories and examinations; the disc provides a comprehensive collection of images covering all major organ systems. The department finds that the compact disc increases the accessibility of images to students and results in significant financial savings because duplication costs for lost or damaged 2x2 slides are eliminated. In addition to the image data bank, this WWW site archives old examinations and the SOM Pathology Laboratory Manual, and administers 14 quizzes to students during the course. Each year, USU students access the 14 on-line quizzes, which use photographic images, answer the quiz questions in an open book format, and submit their answers electronically to the department. A data bank of questions written by USU faculty are archived by computers and used in testing medical students. The use of archived questions allows the department to compare class performance from year to year and to evaluate the quality of the questions, which has reduced ambiguity in examinations. The Department of Pathology also uses Internet technology to provide a web page independent of the University's web site. This page enables students to access information regarding Pathology's educational activities, links them with other medical schools and pathology web sites, informs the public of USU departmental personnel and research activities, and advertises the department's Ph.D. Program in Pathology. In recognition of the need for the deployed military physician to have access to Continuing Medical Education (CME), the Pathology Department also uses computer technology to provide CME credit to these physicians. Through this web page, uniformed physicians can review cases written by the pathology faculty, answer a series of questions based on the specific case, and receive CME credit. More than 300 CME certificates have been issued by USU for this activity.

eMedicine.com - USU Faculty Help to Revolutionize Medical Textbook Publishing. During 2001, two USU department chairs and many other USU faculty played key roles in a publishing breakthrough which has redefined the way today's health care professionals can obtain timely and critical medical information (a skill which is essential to the medical students' future practice). The new "revolution" is called *eMedicine.com* and its impact is worldwide. *eMedicine.com*, the medical education network, which has developed the first and largest on-line, peer-reviewed medical reference library, is available to the entire world, free of charge, assuming Internet access. It consists of 59 on-line reference books covering every medical specialty. Radiographic images, photographs, audio and video clips relevant to each topic are incorporated. Each chapter features 1.5 hours of Category I American Medical Association (AMA) Physician's

Recognition Award continuing medical education (CME) credit. By the end of 2001, it was estimated thatthere would be 15,000 hours of CME credit. And, the textbook will soon be able to be downloaded to Palm Pilots and other hand-held computers, which will increase their portability. Authors and medical editors are volunteers and are not compensated in any way for their efforts. There is significant supervision of content, with several layers of medical and copy editors to assure accuracy and quality. Unlike traditional textbooks, which can be as much as six years out of date at the time of publication, the information in the *eMedicine.com* chapters is updated 24 hours a day, 365 days per year. If an important new study is published in a journal, the research is immediately included in the on-line textbook. The U.S. military is the largest user of the site to date. There are currently five million users per year, and that figure is rapidly increasing every six months. **Leonard Sperling, COL, MC, USA, Professor and Chair, USU SOM Department of Dermatology**, is one of the editors and authors of the Dermatology Textbook on eMedicine.com. And, **James G. Smirniotopoulos, M.D., Professor and Chair, USU SOM Department of Radiology and Nuclear Medicine**, is one of the editors-in-chief of the radiology textbook of eMedicine. Numerous USU faculty members also contribute to this web site.

Telegenetics Web Site Assists with Genetics Education and Services for the DoD. Computer assisted simulations are used as an integral part of several SOM courses. For several years, the Biochemistry Course (MS-I) has used a human genetics tutorial, developed by SOM faculty. This is supplemented in the clinical years by the internationally used Telegenetics web site *(http://www.usuhs.mil/genetics/)*. In response to the recognized need for genetic services, USU designed an Internet solution to assist with genetics education and services for the DoD. The Telegenetics web site was initially developed in 1996 with the assistance of the U.S. Navy Telemedicine Department and the Applied Physics Laboratory (APL) at Johns Hopkins University. The Telegenetics site was moved to USU in 1997 to focus on educational goals and to provide consultations in genetics to the DoD's deployed forces. The mission of the Telegenetics web site is to provide information and education about genetics to DoD primary care providers, specialist physicians, USU medical students, graduate students and researchers, and interns, residents, and fellows within the DoD Graduate Medical Education Programs. The web site acts as a centralized knowledge resource, providing its recipients with on-line genetics lectures, written information, instructional aids like On-line Mendelian Inheritance in Man (OMIM), and links to articles, laboratory services, and patient support groups. Through store and forward technology, the Telegenetics web site also enables consultations about genetic disorders. Health care providers have accessed this site from within the continental United States as well as from international locations, including Yokota, Misawa, and Okinawa in Japan. Costs for transporting patients to consultants in genetics may be decreased by providing information about genetics to patients and health care providers in remote locations via the World Wide Web. Initially, the USU team responsible for maintaining the Telegenetics web site planned to fulfill the following tasks: 1) incorporate video-teleconferencing capability to allow real-time consultations; 2) integrate on-line the Family Pedigree drawing program to improve genetic history intake; 3) integrate Tele-Maternal Fetal Medicine (Tele-MFM) capability to allow store and forward examination of ultrasound, MRI, and CT images from remote locations and to enhance diagnostic capabilities in all DoD medical facilities; 4) develop continuing medical education (CME) on the Web to enhance ongoing learning in genetics; 5) use the Simulation Center to provide computer-assisted education for USU medical students in genetics, including cases, dysmorphology, cancer genetics, and adult genetics; 6) use the Simulation Center to enhance learning in Obstetrical Ultrasound; and, 7) assist in the development of Critical Pathways for clinical services in genetics. During 2001, the web site was maintained and used for providing information to deployed personnel. In addition, educational information was also provided through the use of PowerPoint slides. And, as coordinated by **Charles J. Macri, CAPT, MC, USN, NNMC,** on February 12, 2002, during a Tele-MFM conference with Landstuhl, Germany, USU

has offered use of the web site for Genetics information to personnel in Germany and Italy (as per goal three listed above). Current plans include further development of the web site to provide information about new genetic services and tests as they become available.

Innovative Web-Based Teleconferencing Sessions and Exercises. USU uses interactive, real-time video teleconferencing to link five different sites for its six week clerkship in Obstetrics and Gynecology. In sessions that last from 60 to 150 minutes, site coordinators meet with the clerkship directors and administrative personnel to discuss such crucial issues as curricula, student problems and evaluation, and faculty development. Since the sessions began in May of 1998, USU has found that the sessions enable the standardization of curricula, facilitate the sharing of ideas, reduce administrative tasks through centralized support, and improve the meaning, consistency, and level of detail in student evaluations. The Physiology Course provides an acid/base game in which students diagnose an acid/base disorder from patient data on a Davenport diagram, treat it, and see what the treatment does to the patient. Other exercises include body fluid compartments and Yannet-Darrrow diagrams, and the control of glomerular filtration. These exercises are treated as a regular laboratory in the course. The Pharmacology Course has included a computer-based pharmacokinetic simulation exercise and a computer-based drug information exercise, available to SOM and GSN students as integral parts of the course; both were designed by USU faculty.

The USU Clinical Simulator and Patient Simulator Laboratory Present Scenarios Applicable to Combat Casualty Care, Anesthesia, Critical Care, Trauma, and Emergency Medicine. During 1997, the USU Departments of Anesthesiology, Anatomy and Cell Biology, and Physiology, in collaboration with the National Naval Medical Center's Department of Anesthesiology, developed the Clinical Simulator and Patient Simulator Laboratory (PSL) located in the USU Department of Anesthesiology. The PSL has evolved into a fully interactive clinical training laboratory, equipped as an operating room with standard monitoring equipment, instruments, life support system, defibrillator, and complete audio/video recording equipment. Throughout 2001, Numerous groups of students and medical personnel made regular use of the PSL both as a training facility and as a research resource: 1) **USU First Year Medical Students - Cardiovascular Physiology.** For these students, the simulator is used to complement a teaching laboratory which demonstrates the basic interactions of heart rate, blood pressure, cardiac output, stroke volume, and circulatory resistance; 2) **USU Third Year Medical Students - Two-Week Anesthesiology Rotation.** The simulator helps these students to learn the fundamentals of anesthesia; they practice connecting a patient to external life support. It also helps to ensure that all of the students are presented with a core learning experience; 3) **USU Graduate Students in Nurse Anesthesia in the MSN Degree Program.** USU Graduate School of Nursing (GSN) students undergo basic and advanced simulator training, during which they must handle unique cases with unexpected complications. Some nurse anesthesia students use the simulator as a laboratory instrument for their required Master Degree Thesis Project; 4) **Walter Reed Army Medical Center (WRAMC) Nurses - ICU Certificate Program.** These nurses are exposed to advanced patient care scenarios which include extensive equipment use and critical medical situation training; 5) **Uniformed Anesthesia Residents from Military Centers in the National Capital Region.** These resident physicians are challenged with complex, specifically tailored medical scenarios, designed to prepare them for dealing with critical, time-sensitive situations. For example, recent, incoming classes of anesthesia residents to WRAMC were given an extensive trauma training/evaluation with the simulator; 6) **Collaborative Efforts with the R. Adams Cowley Shock Trauma Center of Baltimore, Maryland.** In this area, the simulator is used as a test device to evaluate how experienced Emergency Room personnel make use of alarms during critical

medical emergencies; 7) **USAF Critical Care Air Transport Teams.** Once a month, USU hosts an Air Force Critical Care Air Transport Team (CCATT) session, during which the three-person team treats the simulator as a real case. Practicing nurses, physicians, and respiratory therapists are involved in the CCATT training scenarios. They receive a call that their services are required, gather their gear, leave their hospital (Malcolm Grow Medical Center), travel to the site of the patient (USU PSL), evaluate the patient's condition, and provide sufficient treatment to ensure successful transport of the patient back to a hospital. Once they leave the hospital, they can use only equipment and supplies that they carry with them.

The patient simulator offers many benefits to students and instructors. Without putting a life at risk, students can experience handling rare conditions such as malignant hyperthermia, learn to recognize a wide variety of problems, practice using instruments and equipment, develop decision-making skills, and accumulate first-hand experience with military-specific problems like combat trauma. Instructors can tailor each case to individual students, selecting the type, level of speed, and degree of severity according to the student's level of competence. If the instructor wants to give feedback or additional directions, the lesson can be paused and repeated as many times as necessary. Sessions are recorded and played back, enabling the students, with the instructors, to analyze their performance and to recognize their strengths and weaknesses. Because no life is at stake, instructors can purposely push students beyond their competency levels so they can learn and retain critical lessons. The patient simulator is a valuable addition to the USU curricula, one which will most surely play an expanded role in the future. The SOM will include patient simulators in basic science curricula during the first and second years of its medical program, thus lending a clinical context to classes in Physiology and Pharmacology. Offering the single simulator in the PSL to teach a class size of more than 165 students requires extraordinarily complex scheduling. During 2000, collaboration between the PSL, the Simulation Center at Forest Glen, and the patient simulation facility at the Naval School of Health Sciences (located on the NNMC base) made three simulators available to better accommodate the larger class sizes. Approximately ten percent of the 125 United States Medical Schools have patient simulators. The USU simulator is featured at the Patient Simulation Laboratory web site *(www.usuhs.mil/psl/)*.

A Multi-Disciplinary Approach for Teaching Responses to Weapons of Mass Destruction and Terrorism. Beginning in 2000 and throughout 2001, the USU Patient Simulation Laboratory has provided educational experiences for both clinicians and emergency operations personnel in Weapons of Mass Destruction and Terrorist (WMD/T) scenarios during a USU SOM Course, The Scientific, Domestic and International Policy Challenges of Weapons of Mass Destruction and Terror. The Course on WMD/T includes two modules: Part I, The Emerging Threat of Biological Weapons and Bioterrorism; and, Part II, Nuclear, Radiological, High Explosives, Chemical Agents, and Unusual Weapons. Simulated scenarios have been designed through the cooperation of experts in bioterrorism, chemical warfare, medical effects of radiation, and trauma. Students who take this course include senior military officers, physicians, nurses, lawyers, career politicians, administrators, and logistic personnel. Part I culminates in extensive simulated crisis events including inhalational anthrax, pneumonic plague, marine toxins, and other biological agents. Part II culminates in an intense simulated crisis event involving the terrorist use of chemical, radiological and explosive devices. Non-clinical students, functioning as staff in emergency operation commands, embassies, and/or hospital response centers, manage conflicting information from on-scene observers, other agencies, and media resources. Clinical students, functioning as staff in an emergency room, provide direct care of multiple patients presented by both mannequin-based simulators and human actors. Debriefing entails discussions about performance in: leadership and followership skills, team performance and dynamics, communication skills, data management, logistic support, resource allocation, emergency declaration, assessment and reevaluation of situation(s), medical triage, medical diagnosis, medical treatment, containment of outbreak(s) or agent(s), and appropriate notification of other officials. These simulated

presentations have received overwhelming approval from the participants as documented in the students' course critiques. Course instructors have requested continuation of past presentations as well as new scenarios. Crisis Management following a WMD/T attack can be taught using patient simulation as the foundation for the event; and, multi-disciplinary input has resulted in simulated events which are overwhelmingly accepted by students. This experience allows personnel who will fill positions involving the management of a WMD/T attack to have their "first time for real" through a simulated educational event.

Virtual Reality Telepresence Surgery System. The USU virtual reality Telepresence Surgery System (TeSS) has gained recognition as an exciting technology training tool. Two USU Class of 1982 graduates, who are also faculty members in the Department of Surgery, have been working with the system since July of 1997. Wearing three-dimensional glasses, students place their hands on a surgical instrument. Peering into a video screen, the Center's students will be able to "touch, tug, cut, or sew" the tissue displayed on the screen; they will actually "feel" the movement. The reach-in display table issues a report on how well the student performed during the procedure. During late 2001 and 2002, collaboration with the USU National Capital Area Medical Simulation Center has included plans to explore the feasibility of using Internet2 as a connection medium for remote telesurgery. Internet2 is a consortium of more than 190 universities, in partnership with industry and the government, to develop advanced network applications and technologies. The USU Simulation Center has been identified as a key user of Internet2 at USU; the necessary fiber links connecting the Simulation Center to Internet2 are in place should the University identify resources to move forward in using Internet2 as a medium for remote telesurgery.

Establishment of a Center for Informatics in Medicine. Biomedical data and the field of informatics continue to rapidly expand. Processes of knowledge retrieval and decision making are critical to the future health care provider. In light of technology's role in knowledge development, biomedical informatics has become an essential component of education in the Health Sciences. Following graduation, health care professionals must be able to use biomedical information to define, study, and solve problems.

In 1996, decisions were made to establish a Center for Informatics in Medicine to be placed under the Vice President for Teaching and Research Support (TRS) as an interim step toward the creation of an academic Department of Biomedical Informatics. Since that time, the Center for Informatics in Medicine has enhanced USU informatics research and education through introductory computer courses, a workshop on Internet applications in diagnostic pathology, and the development of such diverse areas as web sites on educational technology, military graduate education, and HIV in the military. During 2001, the Center continued to provide computer orientation courses for faculty and students. The Center maintains about 100 web sites which support the educational mission of the University. Additional web sites provide on-line, self-assessment tools for USU students and on-line quizzes and examinations for both on-site and distance learning students. The Education Through Technology Special Interest Group, monitored by the Office of the Vice President for Teaching and Research Support, provided electronic programs to enhance existing educational programs and new educational services throughout 2001.

From 1997 through 1999, a coalition of CIM, the LRC, and the appropriate Dean's Office (SOM or GSN), initiated steps to prepare incoming USU students for the expanded role of informatics in their studies and professional careers. It is recognized that if students are to fulfill the five key roles of health care providers - lifelong learner, clinician, educator/communicator, researcher, and manager - they must have the

benefits of a dedicated biomedical informatics program. In June of 1998, the Dean, SOM, appointed a committee to assist in creating the Department of Biomedical Informatics; during 1999, the USU Board of Regents approved the creation of the new academic department.

> **Informatics Education. The doctor is the most highly trained individual in the health care system, and as such it is the doctor who should be the final judge of the data entered into the electronic medical record. If the medical record is also a research tool, then this gives a new responsibility and value added to the physician. Educating medical students to do this well is a major challenge. Students who are not exposed to this type of thinking and practical training in medical school will be at a disadvantage when it becomes the norm, as it surely will.**
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> \- Journal of Investigative Medicine, Volume 46, No. 8, October 1998, page 345.

The Department of Biomedical Informatics. The SOM's Department of Biomedical Informatics, approved by the Board of Regents during 1999, and provided space through the restructuring of the USU Logistics Division's Self Service Store, is recognized as a basic science department with three areas of specialization: bioinformatics, medical informatics, and education. It is conceived as a resource center to extend and enhance already strong curricula through departmental and interdisciplinary courses which will integrate basic sciences with clinical experiences, offer simulated clinical training experiences, continue current teaching efforts in introductory computing, and focus on student-centered learning with case-based, small-group sessions. It will also serve as a clearinghouse for USU informatics applications, and provide a testing facility for informatics research. **The new department, will help to ensure that all USU graduates have a foundation in informatics that will support them, as career professionals, in the Military Health System.** Specifically, the charter for the new department includes the following: 1) support for the curricula through educational technology; 2) extension of the curricula through biomedical informatics; and, 3) identification and research of innovative informatics applications for military health care.

During 2000 and 2001, the Department of Biomedical Informatics was charged to act as a resource center to support and extend the USU medical curriculum and to act as a focus for developmental and research activities in informatics. The current, university-wide operations of the Center for Informatics in Medicine will be retained as the new department's service-based component. Research computing will eventually be reassigned to the Department of Biomedical Informatics and it will no longer be considered a part of the Information Services Management Center (UIS). The Department of Biomedical Informatics will serve as the focal point for USU's academic computing support, spear-heading such activities as sequence analysis, statistical computing, and the student web page pilot project. It will also solve problems associated with the University's widely dispersed informatics initiatives. In the past, attempts to incorporate informatics into USU curricula have been handled by individual departments, leaving the efforts vulnerable to collapse if a key member of the department left or was reassigned. The Department of Biomedical Informatics will serve as a central resource into which all departmental informatics endeavors can be incorporated. Resources for this department will be gradually increased in accordance with the requirements of the SOM and the Military Health System.

Two projects supported by the Department of Biomedical Informatics during 2000 through 2001 involved innovative education applications for military health care. A collaboration with the University of California at San Diego (UCSD) brought the National Library of Medicine's Visual Human to the USU campus as part of an application developed at UCSD - **Anatomic VisualizeR.** This 3-D visualization tool for the Visible Human data set uses a high end Silicon Graphics workstation for stereoscopic rendering of the data set. Currently, this collaboration has developed five lessons specifically for the SOM and the GSN Anatomy Courses.

In August of 2000, the Dean of the SOM charged the Department of Biomedical Informatics to implement a USU Medical Portable Digital Assistant (PDA) Initiative. A working group of students, staff, and faculty devised a staged working plan to deploy the PDA to include: distribution and introduction of the PDA to the SOM students; usage training; communication deployment at USU; communication deployment to the Military Treatment Facilities (MTFs); and, evaluation and refinement of the initiative. **The PDA devices were provided to the USU second year medical students in December of 2000.** Studies have confirmed that physicians and medical students are able to successfully incorporate PDAs into their patient care workflow. With the use of a drug information data base, clinicians save time, improve knowledge for themselves and their patients, and possibly decrease preventable adverse drug effects. The goal of the USU Medical PDA Initiative is the integration of this technology into the clinical setting. The objectives of the USU PDA Initiative follow: 1) communication while students are at clinical sites (HandDBase and associated data bases); 2) clinical encounter log collection (CWebLog developed within the USU Departments of Biomedical Informatics and Medicine); 3) clinical reference material access (qRx(ePocrates) and 5-Minute Clinical Consult; and, 4) clinical calculator availability (MedMath). USU students are responsible for installing five applications and the CWebLog channel on their PDAs. During their clerkships, each student is expected to operationally maintain his or her PDA. The PDA serves as a significant option that the USU students have for maintaining a log of their clinical encounters. **During 2001, this educational tool was determined to be a complete success; and, distribution will be continued in the future.**

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National Capital Area Medical Simulation Center.

Just as the military has remained a driving force behind the evolution of flight simulation, the Uniformed Services University of the Health Sciences (USUHS) National Capital Area Medical Simulation Center, with its mission to establish a world-class, cutting-edge medical education facility, is definitively ahead of the curve in terms of the utilization of simulation to enhance medical education and readiness. The Center pushes medical simulation into the 21st Century.

- Military Medical Technology, "Locating the Cutting Edge," page 32, Volume 5, Issue 5, 2001.

Background. In response to new technologies, a requirement for standardization in assessment, and also the rapid downsizing of the inpatient teaching base, U.S. medical educators have developed a variety of new training and testing tools (trauma and anesthesia simulators, interactive computer based testing (CBT), distance learning, virtual reality applications, and clinical simulations using "standardized patient" actors (SPs). All of these innovations are being rapidly implemented throughout the United States and are being incorporated as new quality standards for medical education and testing. For example, the National Board of Medical Examiners scheduled the implementation of CBT in the U.S. Medical Licensing Examination (USMLE) for 1999; and, clinical testing utilizing standardized patients will be implemented as part of the USMLE Step 2 sometime between 2003 and 2005. Similar requirements are being discussed by the accrediting entities for advanced practice nurses.

These innovations in medical education conform with the 1995 DoD Medical Readiness Strategic Plan which states: "The use of modern technological advances such as computer simulations and virtual reality has the potential to provide realistic training in battlefield techniques and procedures, and should be pursued to enhance medical readiness training." In July of 1995, the Dean of the USU School of Medicine, and the Commander of the Walter Reed Army Medical Center (WRAMC) established a committee to plan for a model military medical simulation center for the 1) development and use of military medicine databases for education and training; 2) simulation, teaching, and measurement of patient interviewing, physical examinations, and diagnostic skills; 3) instruction, assessment, and documentation of readiness skills; and, 4) focused pre-deployment training. The Associate Dean for Clinical Affairs, SOM, was appointed chair of the planning committee and designated to coordinate the project for the University.

Upon the determination of space and personnel requirements by the planning committee, a building on the WRAMC annex at Forest Glen, Maryland, was identified and approved by the Commander of WRAMC as the location for the center. An initial design study, funded jointly by USU and WRAMC, was completed in September of 1996. Two subcommittees subsequently prepared recommendations on technology and annual cost estimates. In 1997, the concept was briefed to the Assistant Secretary of Defense for Health Affairs and the Surgeons General during a meeting of the TRICARE Readiness Executive Committee (TREC), who referred it to the Defense Medical Readiness Training and Education Council (DMRTEC). Following a briefing on September 25, 1997, the DMRTEC approved the concept and recommended that USU program for funding. In 1998, the President of USU allocated funds for the renovation of the Forest Glen space and the purchase of equipment. The one hundred percent design was completed on August 12, 1998. Funds for the renovation, furniture, and security were obligated on September 30, 1998. Program development and hiring of staff began late in Fiscal Year 1998 and continued throughout Fiscal Years 1999 and 2000. The construction for renovation was completed during 1999; in September of 1999, the simulation center began

training and testing military physicians, nurses, and medical students. On April 21, 2000, the 11,000 square foot National Capital Area Medical Simulation Center (SimCen) was officially opened at the Walter Reed Army Medical Center annex in Forest Glen, Maryland. The SimCen was the first single location to integrate the use of virtual-reality technology, computer-controlled mannequins, and human simulated patients under one roof.

Educational Activities. During 2001, the SimCen was instrumental in introducing medical simulation technology in support of numerous and distinct medical education programs. During its first 22 months of operation, the SimCen has supported 54 educational activities: 16 School of Medicine; 12 Graduate School of Nursing; 14 Graduate Medical Education; 5 medical readiness; and, 7 research training activities. These educational activities, in turn, supported over 7,500 student encounters. At present, the SimCen expects to support a similar number of programs and student encounters during 2002.

Over the past 22 months, the SimCen has conducted over 350 tours (35 foreign nations; 70 educational institutions; and, over 200 visits from military, professional, congressional, and private organizations). To date, the SimCen is currently serving as a template for more than 30 educational institutions which are attempting to employ similar simulation technology into their own medical education programs. As an example of the growing reputation of the SimCen, on February 21, 2001, the USU SimCen was included in the Discovery Channel series, "The Nature of Things." The segment of the program featuring the SimCen was entitled, "Surgeons of the Future."

Multi-Simulation Techniques Under One Roof. While an increasing amount of professional health care training uses simulation techniques, the SimCen is very likely the only place in the United States which combines multi-simulation techniques under one roof. This state-of-the-art teaching facility allows health professionals to augment their skills through patient simulations, virtual reality applications, and training with mannequin simulators. It uses technology and actors posing as patients to teach students about situations that they may encounter as practitioners but might not otherwise experience while training in hospital wards. It also allows for a safe transition between simulations in the classroom and real-life situations in the clinic for learning procedural and surgical skills, and for the interaction with patients in sensitive or difficult situations. Another use of the SimCen is the instruction of readiness skills and focused pre-deployment training for wartime, peacekeeping, and humanitarian missions.

The SimCen is divided into four functional areas: the Administrative Area; the Clinical Assessment Laboratory; the Computer Laboratory; and, the Surgical Simulation Laboratory. Each distinct area can sustain educational activities on its own; and, when necessary, integrate the operations of the entire SimCen for a more comprehensive approach. All of the functional areas have been designed to maximize students' access to clinical experience in a state-of-the-art learning environment. Thus, during 2001, the SimCen employed numerous simulation approaches which included: 1) standardized patients; 2) multi-media, interactive, clinical case presentations on LAN or web based CD-ROMSs; 3) virtual reality software applications; 4) medical simulators; and, 5) video-teleconferencing/distance education. Some examples of the specialized simulation equipment currently being used include: 1) CathSim AccuTouch: Immersion Medical; 2) Vascular Anastomosis Simulator: Boston Dynamics, Inc.; 3) Bronchoscopy Simulator: Immersion Medical; 4) Laparoscopy Simulator: Immersion Medical/Surgical Science; 5) Ultrasound Simulator:

MedSimEagle; 6) Human Patient Simulators: MedSimEagle; 7) SimMan Patient Simulator: Laerdal/Medical Plastics Laboratory; 8) Hand-Immersive Workstation: Cie-Med; 9) Head Mounted Display; and, 10) People-Shop Software: Boston Dynamics, Inc.

The Administrative Area. The Administrative Area serves as the hub for the SimCen; the area includes both the administrative offices as well as the Video Teleconference (VTC) Room. In addition to daily operational activities such as personnel, budgeting, and resource allocation, the Administrative Area houses the offices of the SimCen Director, Deputy Director, and Standardized Patient Trainer. The VTC Room is the SimCen's audio/video entry and exit point to the outside world. Equipped with state-of-the-art video teleconferencing equipment, any of the video signals throughout the SimCen can be routed through the VTC Room and sent to any connected site in the world. This capability allows individuals at remote sites to participate and to review many of the exercises which take place in the SimCen. The VTC Room is equipped with a "telecommuting" conference table, which allows up to twelve students, faculty, or visitors to connect their computer laptops to twelve local area network ports for high-speed Internet access. The table is also outfitted with sixteen headphone ports, allowing various audio exercises which permit instructors and students to simultaneously utilize the same audio files for review and discussion. As a standard conference room, it is also equipped with a slide-to-video converter, document camera, and VCR.

The Clinical Assessment Laboratory. The Clinical Assessment Laboratory is designed for teaching and evaluating students in the basic clinical skills of history taking, physical examination, communication, and interpersonal skills. Here, encounters with simulated patients provide an ideal transition from the classroom to real patient contact. The Clinical Assessment Laboratory also prepares medical students for the U.S. Medical Licensing Examination. The area consists of four sub-sections: the Orientation Room; the Clinical Examination Room area; the Monitoring Area; and, the Standardized Patient Lounge. The Orientation Room is used to brief the students. A ceiling-mounted, drop screen and LCD projector are used to display PowerPoint and/or video presentations for orientation, registration, and briefing students on specific event protocols. The students are registered for clinical events through a log-in process which tracks the students throughout their activities at the SimCen.

The Clinical Examination Room Area consists of 12 examination rooms which serve as the simulated clinical environment for the SimCen. There are ten typical (120 square feet) examination rooms and two large (220 square feet) rooms with hospital beds which can be used for inpatient and/or critical care simulation. The large rooms are also suited for trauma simulation and small group teaching events. In the Clinical Examination Area, students have the opportunity for encounters with live patients who simulate specific challenges in outpatient, inpatient, or critical care settings. Specifically, individuals, referred to as standardized patients, are hired and trained to simulate scripted clinical cases. These clinical cases may be simulated using performance, make-up, real conditions, or a combination of all three. Each Clinical Examination Room is equipped with two video cameras and microphones which permit encounters to be recorded for subsequent analysis. Each room is equipped with a computer for the patient; a wall-mounted computer is also located outside of each room for students to use for documentation before and after the encounter. Typically, clinical examinations are designed following a directive to achieve specific educational goals. The Standardized Patient Trainers and the Medical Director collaborate with faculty members to create projects which meet stated educational goals.

The Monitoring Area is located at the center of the Clinical Examination Area and allows the Standardized Patient Trainer and faculty instructors to monitor the progress of the clinical examinations. A specialized video router controls 24 videotape decks which track the students as they move from room to room. A touch screen control panel permits cameras to be positioned for optimal imaging. Faculty and students are able to view recorded tapes as if they were in the room, allowing for more detailed observation and more dynamic feedback. The Monitoring Area is also used for training simulated patients.

The Standardized Patient Lounge is a staging area for simulated and standardized patients to prepare for, and to relax following, activities at the Center. This area is required as "patients" often use theatrical make-up to simulate traumatic injuries or other conditions.

The Computer Laboratory. The Computer Laboratory has two sections: the Computer Laboratory itself and an adjacent Control Room. The Computer Laboratory has two primary functions. The first is to identify, develop, and/or use medical education software which contributes towards clinical or medical readiness skills. The second is to provide an environment in which computer-based, interactive clinical examinations can be administered. The Computer Laboratory consists of sixteen Internet accessible workstations which can run a variety of medical educational CD ROMs. Eight overhead cameras and a one-way mirror between the Computer Laboratory and the Computer Control Room ensure that examinations are properly monitored when the Computer Laboratory is being used for testing. Students use the Computer Laboratory to work with interactive software programs which may be linked to activities occurring in other functional areas of the SimCen. Additionally, students can prepare for the National Board of Medical Examiners (NBME) Examination by practicing test questions from several test preparatory software packages available in the SimCen. **Currently, the Computer Laboratory meets, or exceeds, the requirements set for an NBME testing site.** Students and faculty can also use the computers to conduct independent studies or to view USU mail or class schedules.

The Computer Control Room is adjacent to the Computer Laboratory. It is the nerve center for the SimCen. All data, voice, and video signals are fed through the Control Room and can be routed to other areas in the SimCen accordingly. The Control Room also houses several departmental servers which handle the current requirements of the Center. During testing, the Control Room operates as a monitoring station for instructors, allowing overall viewing of the Computer Laboratory through a one-way, mirrored window or specific viewing of the individual workstations from the overhead camera.

The Surgical Simulation Laboratory. The Surgical Simulation Laboratory uses virtual reality and a full-scale operating room mock-up to provide highly realistic scenarios for surgical training. This area is the first site approved to investigate teaching the surgical skills practicum for the Advanced Trauma Life Support Course through the use of computer-based simulators and plastic models rather than anesthetized animals or cadavers. The Operating Room is furnished to look and feel like a typical operating room. In addition to the typical Operating Room equipment, the room holds intravenous catheterization, endoscopy, and diagnostic ultrasound simulators. The Operating Room can be configured to match the conditions of a standard Operating Room, an Emergency Room, or an Intensive Care Unit. Here, a single human patient simulator responds to various drugs and interventions. Driven by two computers, the human patient simulator can be pre-programmed with patient characteristics or variables such as age, anatomy, and physiology factors depending upon the training event. Students are faced with real-life situations as the human simulator breathes out Carbon Dioxide, and breathes in various gases, depending upon the scripted clinical procedure. The simulator has five palpable pulse areas and will exhibit the appropriate physiologic reactions in

response to various intravenous or inhaled agents. Presently, there is a capability for 80 different drugs to be "virtually" administered by various computer microchips. The simulator responds to the type and amount of these drugs according to instructor-determined, pre-programmed patient variables. In the Operating Room Control Room, a two-way headset and a one-way mirror into the Operating Room allow instructors to communicate with the Operating Room Coordinator. From the Control Room, the coordinator can change patient variables on the computer and even speak into a hidden microphone feed on the simulated patient in order to bring more realism to the scene.

The Virtual Reality Laboratory, which is funded, in part, by the Association of Military Surgeons of the United States (AMSUS) develops computer-based surgical simulators to meet the educational objectives of the Simulation Center. Two functional directives of the Virtual Reality Laboratory are research which advances simulation procedures and harnessing the capabilities of existing technologies. In the Virtual Reality Laboratory, state-of-the-art computer-based equipment enables students to view medical objects in two or three dimensions. A haptic interface allows the computers to re-create the tactile sense which permits users to touch, feel, manipulate, create, and alter simulated 3D anatomic structures in a virtual environment. Here students can teach themselves, at their own pace, and they can feel comfortable about making mistakes as well as repeating an exercise. The Virtual Reality Laboratory is equipped with simulators for Vascular Anastomosis, Pericardiocentesis, a Diagnostic Peritoneal Lavage Unit, and a hand-immersive environment for on-going research. **Both the Pericardiocentesis and Diagnostic Peritoneal Lavage simulators were developed in the Virtual Reality Laboratory. These two simulators are the first of their kind and, they are unique to the SimCen.**

Telementoring and telesurgery systems can provide a solution when expertise for treating conditions caused by highly toxic or contagious contaminants is not available. Previous telesurgery attempts have been limited by the necessity of dedicated, high-bandwidth links between master and remote units. The recent development of the Internet2 High-Bandwidth Network is a potential solution to the problem. The SimCen plans to explore the feasibility of using Internet2 as a connection medium for remote telesurgery. Internet2 is a consortium of more than 190 universities, in partnership with industry and the government to develop advanced network applications and technologies. USU is a member of the consortium; and, both the hardware and the necessary fiber links connecting the SimCen to Internet2 are in place. Once resources are identified, the first step for remote telesurgery would include a remote link to be set up between the SimCen and USU. This would allow the conduction of connectivity tests on the equipment and the fine-tuning of the network for optimal performance.

The Operation and Maintenance costs for the SimCen are expected to be partially offset through the use of the computer-based testing laboratory by medical and nursing students from USU and the military treatment centers throughout the D.C. area as they prepare for their computer-based testing/certification requirements. The SimCen should also generate cost-avoidance through the provision of readiness training and distance learning for the Military Health System as requested by the Surgeons General.

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Research Administration.

We will optimize our role in military and federal medical education and research.

- Goal 5, USU Strategic Plan, 2001.

Background. The Office of the Vice President for Research was established at USU to facilitate, promote, and oversee the research activities at USU. The position of the Vice President for Research evolved through recommendations from the USU faculty. Following an extensive search, the first **USU Vice President for Research, Ruth Ellen Bulger, Ph.D.**, was appointed during March of 1996; she served in that position until March of 2000. The second **Vice President for Research, Steven Kaminsky, Ph.D.**, was appointed in the position and arrived at the University in March of 2001. The Office of Research (REA) currently consists of thirteen full-time personnel who report to the Vice President for Research. The Office of Research reviews, monitors, and coordinates approvals for all matters dealing with research at the University, to include the following: identification of potential funding sources; pre-award review and administration; grant awards and receipts; post-award administration; administration of the human participant research program, to include review and approval by the University's Institutional Review Board (IRB); and, the monitoring of all regulatory compliance requirements.

The Office of Research also provides coordination and support for the Graduate Student Colloquium and the Faculty Senate Research Day. This annual event, held on April 10 through 11, 2001, included internationally known keynote speakers as well as presentations of on-going research by USU faculty, students, and investigators from affiliated institutions such as the Walter Reed Army Medical Center (WRAMC), the National Naval Medical Center (NNMC), the Armed Forces Institute of Pathology (AFIP), and the Washington Hospital Center. Workshops and symposia are also sponsored by REA on topics of interest to the USU community. During 2001, REA-coordinated workshops addressed career development strategies for graduate students, emerging issues in technology transfer, and the policy considerations and federal regulatory requirements upon which assurance committees such as the USU Institutional Review Board (IRB), the Institutional Animal Care and Use Committee (IACUC), and the Radiation Safety Committee base their review and approval.

The Office of Research provides service to three communities: the University as an institution, USU faculty and student investigators, and more than 80 funding organizations which support research at the University. The REA staff runs the intramural grant program and provides administrative support for the SOM Research Merit Review Committee, which conducts peer review of all faculty applications for intramural funding. During 2001, the USU Intramural Program consisted of 80 militarily relevant protocols, 61 clinical research awards, and eight projects in areas of educational research. Standard USU awards for militarily relevant research were typically funded at 90 percent of the applicant's budget request; clinical research awards were generally supported at 80 percent. As part of the University's on-going efforts to encourage young faculty, new assistant professors with a standard award in either category received 90 percent of their budget requests. The 2001 USU student research programs supported the work of 9 students in the School of Medicine, 32 students in the Graduate School of Nursing, and 28 candidates in the Ph.D. or Dr.P.H. Graduate Education Programs. Student applications were reviewed by a faculty committee in each student's area of study and by the appropriate Dean.

Similarly, in 2001, the Office of Research provided oversight for six multi-site, Congressionally-funded research programs which totaled $30,000,000: the TriService Nursing Research Program; the

Center for Prostate Disease Research; the Defense Brain and Head Injury Program; a Coronary Artery Disease Reversal Program; the Clinical Breast Care Program; and, the new Program for Post-Polio Research. Together, these programs support approximately 100 individual research projects conducted at USU and elsewhere. To better support these Congressionally-funded research programs administered by USU, a full-time coordinator was added to the REA staff during 2001. This individual will eventually serve as a central point of contact to assist investigators, program managers, project administrators, and the REA research specialists who are involved with these programs and for whom REA provides guidance and oversight.

Extramurally funded research at USU included 330 projects supported by Federal agencies such as the National Institutes of Health (NIH), the National Science Foundation (NSF), the Department of Energy (DOE), the U.S. Army Medical Research and Materiel Command (MRMC), and the Office of Naval Research (ONR). These investigations explored a variety of scientific areas, including basic biomedical issues central to the mission of the Military Health System: the mechanisms, transmission, and control of a wide range of infectious diseases; a variety of crucial topics in combat casualty care, operational medicine, and health education and promotion; Defense women's health issues; warfighter performance factors; responses to the various stresses of military life; and, the development of new methods for the diagnosis and treatment of medical problems faced by the U.S. military and their dependents. (See Appendix C for examples of the achievements and recognition awarded to individual USU researchers.)

USU Researchers Investigate Diseases of Special Interest to the Military. A wide array of research protocols at USU investigate specific disease threats faced by the Uniformed Services during peacetime and deployment. For example, malaria is endemic in many areas where the military deploys its fighting forces; technological advances conducted by USU researchers have made it possible to predict mosquito population levels and transmission risk for a range of mosquito-borne diseases such as malaria, even within precise areas and time frames. By using satellite imaging and remote sensing devices, researchers assist in predicting high-risk locations for the occurrence of malaria and similar diseases. These predictions focus disease control operations and conserve scarce finances as well as human resources. Infectious diseases studied at USU have included, or continue to include, the following: malaria; Venezuela equine encephalitis (VEE); leishmaniasis; E. coli, H. pylori; and, bartonellosis. Examples of additional disease-related research have included: identification of previously unknown bacterial virulence genes; and, analysis of the genesis and pathology of various types of virus. These projects have supported the military medical mission by advancing the understanding of both the transmission and the internal mechanisms of a spectrum of pernicious and/or common diseases which may be faced by deployed forces. It is envisioned that these protocols will provide important applications and open avenues to better ensure homeland defense through the control, diagnosis, and treatment of natural and manmade biological threats. In support of these research activities, the SOM Office of Clinical Affairs coordinated the updating of the USU Memorandum of Agreement with National Naval Medical Research (NNMR) during 2001; the new agreement includes collaborations with laboratories in Lima, Peru, Jacarta, Indonesia, and Cairo, Egypt. A similar agreement was also completed with the Walter Reed Army Institute of Research (WRAIR) for collaborations with its laboratories in Kenya and Thailand.

USU Research and Combat Casualty Care. Research conducted by USU faculty in the area of combat casualty care continues to enhance the provision of rapid diagnostic methods and treatments which ensure military readiness, excellent care for deployed forces, and the rapid return of the injured and sick to

active duty. Protocols which deal with combat casualty care have focused on the following areas: 1) exploration of pain-control mechanisms which underlie established treatments such as morphine; 2) blood preservation and delivery (e.g., the effects of cross-linked hemoglobin in traumatic brain injury, global and local responses to profound hemodilution, and the effect of environmental hazards on heme regulation); 3) treatment of nerve injury, to include providing the groundwork for effective strategies to limit nerve damage and encourage nerve regeneration (e.g., low-power laser irradiation on in vivo nerve regeneration and the role of neurocytokines and plasticity in sensory nerve injury); 4) understanding, preventing, and treating endotoxic shock; 5) wound healing and sepsis (e.g., characterization of inflammation and its intercellular mediators, and the use of prophylactic intravenous antibiotics for penetrating eye injuries); and, 6) identifying causes of life-threatening complications resulting from the combination of exertion and injury under deployed conditions to ensure the effective treatment of traumatic injuries.

USU Research Augments Military Operational Medicine. Most of the USU research protocols in the area of military operational medicine have fallen under three general categories: 1) factors which enhance military readiness (e.g., human performance models for exercise, reduction in acute and chronic injuries, and understanding of endocrine factors that affect performance); 2) factors which decrement human performance (e.g., acute and chronic Post Traumatic Stress Disorder (PTSD), neurological stress and dysfunction, and hyper- or hyperthermia); and, 3) endocrine control and its effect on performance (e.g., endocrine and immune interactions with exercise, and the relations between trauma and human stress). Currently, USU researchers are investigating the ability to manipulate the physiological mechanisms of stress and immunity, human sleep and seasonal cycles, and the neurological changes necessary to short- and long-term memory. Such research should assist the MHS to: allow deployed forces to stay awake longer with less impact on performance; develop better strategies for enhancing and preserving memory; ultimately prevent and treat neuropsychotic illnesses such as depression and post traumatic stress disorder; and, facilitate deployed troops and their families in preparing for, and contending with, the significant stressors associated with military operations.

Enhancement of Administrative Services. During 2001, REA instituted regular meetings with the Research Administrators of the USU departments, centers, and activities. The meetings were established to: identify and resolve problems; streamline the processes for submission, review, and administration of grant applications; and, strengthen the working relationships among the REA staff, USU departmental staff, faculty researchers, and the Henry M. Jackson Foundation Office of Sponsored Programs. The Jackson Foundation provides significant administrative services for more than 80 percent of the extramurally funded projects at USU.

Coeus, the Grants Management Database, underwent a major upgrade during 2000, to improve the functionality of the database and the appearance of the printed reports. Coeus stores detailed pre- and post-award information on each of the research protocols submitted or conducted by the USU investigators. Its records now include a complete history of every change or action from the award notice through the close-out (e.g., award amounts, assurance status, modifications, and reporting requirements). The upgrade also enables the REA staff to download information from the database into an Excel spreadsheet, which, in turn, provides greater speed and flexibility in gathering detailed and accurate grant information for programmatic reports and the administration of the individual projects. The REA staff has also developed several standard, but USU-specific, award reports. REA staff can now easily provide USU faculty members, departments, and administrators with information concerning the status of all USU research projects, reporting and

assurance deadlines, and the total amount, or percent, of effort that is assigned to each research project. In addition, the USU Research Home Page <*www.usuhs.mil/research*> was expanded and updated during 2000. The site provides pertinent, up-to-date, user friendly information on both intramural and extramural grant opportunities. It also provides the ability to download a wide range of application and assurance forms.

During 2001, the Vice President for Research initiated strategic planning for a series of weekly workshops which will provide sustained, focused instruction and peer critiques for junior faculty engaged in writing applications for extramural funding. Each workshop session will address the skills and expertise required to complete each section of the typical grant application: the abstract for the grant proposal; background for the area of interest and proposed research; the hypotheses and specific aims of the proposal; presentation of preliminary results; experimental design and methodology; and, statistical analysis. The initial workshop is scheduled in 2002.

Institutional Review Board (IRB). The Program for the Protection of Human Participants in Research and the USU IRB jointly ensure the protection of human volunteers from risk during research conducted at USU and its affiliates. The Program's administrative staff, who also function as members of the REA staff, review each protocol conducted at the University or by a member of the USU faculty or student body to ensure that: 1) the research complies with the regulations and standards of DoD and other Federal organizations, as applicable; 2) potential risks to the subjects are minimized by the research design and do not outweigh the actual benefits of participation; 3) appropriate processes of obtaining informed consent from potential subjects are in place adequate to the backgrounds of the volunteer population as well as the research design; the processes should not be coercive or disrespectful of the needs of the individual volunteers; and, 4) the documents produced during the consent process and the conduct of the research protocol are maintained in accordance with standard scientific practice and Federal regulations.

Each research project, following review and recommendations, is then presented to the full IRB at its monthly meetings. In 2001, the IRB reviewed and approved the following: 211 initial proposals for human subject research; 120 amendments to protocols already underway; and, 119 annual or semi-annual reviews of previously approved projects. Although the IRB meets at least once a month, several additional ad-hoc meetings are generally required over the course of a year. The USU IRB consists of 21 voting members, including nine physicians, two basic scientists, three social/behavioral scientists, one nurse, one epidemiologist, and the USU chaplain and four other representatives of the non-scientific USU community. Seventeen of the 21 members are drawn from the USU faculty and staff, two are employed by NIH, one practices at WRAMC, and one is from NNMC. Three non-voting members provide coordination or staffing services and attend each meeting: the IRB's Executive Secretary; the Vice President for Research; and, a member of the USU Office of the General Counsel. During 2001, USU hosted IRB 101, a one-day training course on the fundamentals of research protections and regulations for human volunteer subjects. The course was attended by 100 individuals and featured discussions on the ethical principles underlying human research, an overview of the Federal regulations governing such research, and small group (mock IRB) analyses of specific case studies. The annual course featured **Dr. Charles McCarthy, Senior Research Fellow, Kennedy Institute of Ethics, Georgetown University,** and **Susan Kometsky, MPH, Children's Hospital, Boston**.

A review of the USU IRB Program was conducted during July of 1997, by the Director, Scientific Activities, Office of the Assistant Secretary of Defense for Health Affairs. Although the review found no significant deficiencies, the REA staff was expanded to accommodate the growing number of protocols

requiring IRB review. An Institutional Review Board Coordinator was added to the REA staff during 1999. USU investigators who plan to do research with human participants are encouraged to have pre-application discussions with the staff of the IRB Program. Program staff and new members of the IRB attend national conferences in order to remain current with the latest human-participant issues and regulations. The Food and Drug Administration (FDA) has cognizance over Federal IRB Programs where research is conducted with investigational new drugs and devices. Because some USU research falls into this category, the FDA has the authority to audit the entire USU program. On March 22 and 23, 1999, an FDA inspector conducted a two-day audit of the USU Human Use Program and the USU IRB. The audit included a review of IRB minutes from 1997, 1998, and 1999, plus a random sampling of the IRB files on protocols with a greater than minimal risk to human subjects. The USU IRB Program was found to be in full compliance with the governing regulations (Title 21, Code of Federal Regulations, Parts 50 and 56) with no need of corrective action by the Division of Scientific Investigations, Office of Medical Policy, Center for Drug Evaluation and Research of the FDA. During 2001, in addition to the previously awarded Assurance of Compliance from DoD, USU obtained a Federal-Wide Assurance from the Department of Health and Human Services (HHS). Each assurance sets out USU's institutional responsibilities in the protection of human subjects to include: 1) standards for the initial and continuing review of research protocols; 2) requirements for the prompt reporting of information required by each Federal agency, to include the suspension or termination of any study due to non-compliance with regulations or unexpected, serious harm to a research volunteer; and, 3) guidelines for the appropriate training and educational requirements for IRB members, USU investigators and administrative staff. **The audits conducted by the Director of Scientific Activities for the Office of Health Affairs in July of 1997, and the FDA in March of 1999, combined with the Assurance of Compliance obtained from DoD and the Federal-Wide Assurance from HHS, have demonstrated that the outstanding support rendered by the USU Program for the Protection of Human Participants in Research and the USU IRB to the University research environment and community meets, or exceeds, all governing standards and regulations**.

A Separate IRB Is Approved for the Military Cancer Institute. On January 14, 2002, a separate Institutional Review Board was formally approved at a signing ceremony attended by the President of USU and the Commanders of NNMC, WRAMC, and the Malcolm Grow Medical Center (MCMG). The Military Cancer Institute IRB will draw its members from the four organizations. The new IRB will assist physicians, dentists, nurses, and other health care providers in their pursuit of oncology research in compliance with Federal regulations and accepted ethical standards of scientific conduct. Protocols conducted under the auspices of the Military Cancer Institute are designed to improve the quality of patient care and to enhance the education and training of staff.

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USU Center for Laboratory Animal Medicine, Veterinary Surgery Division. On November 4, 1999, the USU Center for Laboratory Animal Medicine received confirmation of continued full accreditation from the Council on Accreditation of the Association for Assessment and Accreditation of Laboratory Animal Care (AAALAC International). **"The Council on Accreditation of the AAALAC has reviewed the report of the most recent site visit to USUHS... The Council commends the staff and administrative personnel for continued development of alternatives to animal use in surgical protocols. The Council is pleased to inform you that the program conforms with AAALAC International standards as set forth by the Guide for the Care and Use of Laboratory Animals (Guide), NRC, 1996. Therefore,**

considering the provision stated below, the criteria for maintaining FULL ACCREDITATION have been assured." The Center for Laboratory Animal Medicine is scheduled for its next AAALAC inspection in May of 2002.

Background. The USU Veterinary Surgery Division (VSD) of the Center for Laboratory Animal Medicine provides full surgical training support to qualified USU faculty supporting both teaching and research protocols. VSD is composed of two large teaching laboratories and two operating rooms used chiefly for research protocols involving non-rodent species. These areas are equipped with modern surgical and surgical support equipment which allows comprehensive care and monitoring. Support areas include separate instrument cleaning and sterilization rooms, a surgeon's scrub area, and a large multi-purpose room used for both pre-operative procedures and post-operative recovery. During 2001, a third operating room was utilized by a LASER research team for special procedures.

Current Activities. A variety of significant teaching laboratories were conducted during 2001 by VSD. These laboratories provided students with invaluable experience working with biological tissue; also, the laboratories were frequently reported by the medical students to be one of their most valuable learning experiences. The teaching laboratories provide the students with the opportunity to gain experience in basic surgical skills and the proper handling of tissue among other critical techniques. These skills help students to more effectively function during their future residencies and in the practice of medicine. Also, in the event that as military physicians they will be deployed under battlefield conditions, the familiarity and heightened skill level afforded by the teaching laboratories can prove to be of significant value. Students are exposed to a combination of training techniques prior to specific training on the use of animals. **The use of computer simulation and mechanical surgical simulation devices complements the students' surgical training experiences and also reduces the number of animals required to provide the necessary training.** Navy corpsmen staff the VSD; all are trained human surgical technicians, which enables a solid professional relationship between veterinary surgery staff members, surgeons, and students. The corpsmen also contribute significant preoperative and monitoring skills to all of the teaching laboratories of the Multidiscipline Laboratories. An assignment to USU has been found to tremendously broaden the experience of the corpsmen and to afford a unique training opportunity through the combination of human surgical skills with current veterinary technology. Also, co-located with the surgical section are radiology support services which include a human hospital GE Advantx X-ray unit equipped with fluoroscopy. This equipment allows advanced diagnostic capabilities for the central animal facility and serves as a tremendous resource for USU investigators.

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USU Barrier Facility. A rodent barrier facility occupying approximately 2,558 square feet within the USU Central Animal Facility is capable of housing 6,000 mice. This resource was conceived and developed by the Vice President for Teaching and Research Support and veterinarians from the Center for Laboratory Animal Management, along with input from the USU Institutional Animal Care and Use Committee, and interested USU investigators. The facility, opened during 1999, is equipped to accommodate the needs of USU investigators whose protocols require that research animals (rodents) be kept under ultra clean conditions. Ultra clean conditions are necessary to reduce the chance of pathogen exposure, which could have devastating effects on research goals and potentially result in the waste of animal lives, investigators' time, and related resources. The facility is also intended for the housing of transgenic mice (mice which have been altered genetically to simulate disease states or modified biochemical conditions).

The Barrier Facility has a staff composed of one full-time technician who is specifically trained in transgenic techniques and is capable of producing transgenic animals; in addition, an animal husbandry caretaker also supports the barrier facility. The technician daily monitors animals housed within the barrier and is responsible for: 1) written entry procedures (which include the use of personal protective equipment) and the restriction of non-essential personnel; and, 2) the conduction of training on barrier-housed animal handling procedures. Equipment acquisitions in support of the barrier include ten additional ventilated cage racks and a computerized, controlled rate freezer for the cryopreservation of crucial reproductive elements (embryos, eggs, and sperm). The controlled-rate freezer is a state-of-the-art piece of equipment which allows the long-term storage of frozen mouse embryos. Once a transgenic or other valuable mouse line is developed, the cryopreservation technique keeps that line viable without having to house large numbers of breeding animals to maintain the line. When a particular mouse line is required, the embryos are thawed, implanted, and normal breeding of the line continues. This saves a tremendous amount of space and resources that would normally be required for maintaining a breeding colony. **The capability to produce transgenic animals for investigators is a research tool that is not available at other Department of Defense research facilities in the National Capital Region.**

The barrier is equipped with a limited access card key system and consists of four sections: an autoclave area with two physically separate rooms; five clean animal holding rooms; one procedure room; a laboratory for transgenic surgical and manipulative procedures; and, a storage area. One of the animal holding rooms can be used as a quarantine room for animals awaiting final clearance of health status. All barrier mice are housed in specially ventilated cage racks, such that the animals are only exposed to highly filtered (sterile) air. All supplies (caging, bedding, food, and water) are sterilized prior to entry or use in the barrier. The transfer of mice from soiled caging to clean cages is performed in a positive pressure laminar flow cabinet, which further ensures protection from pathogenic agents. The USU barrier has the distinction of being free of rodent diseases due to the essential efforts of the USU staff.

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Implementation of Safety Strategies. The overall mission of the USU Center for Environmental Health and Occupational Safety (EHS) is to protect: the USU community from harm during their employment at the University; our facilities; and, the environment. To accomplish this mission, during 2001, EHS continued its on-going development and implementation of the following three strategies:

<u>Increase the Safety Consciousness and Wellness of the USU Community.</u> EHS continuously works to raise the "safety consciousness" of the USU community through eleven strategic goals: 1) focusing EHS efforts on laboratory safety inspections versus reviewing protocols; 2) establishing a USU Safety Committee; 3) prominently displaying safety concepts in highly visible areas; 4) rewarding researchers who achieve outstanding laboratory safety inspection results; 5) ensuring that researchers are held accountable for unsatisfactory laboratory safety inspections; 6) making EHS team members' efforts and accomplishments more visible to the USU community; 7) providing limited items for researchers' use without cost; 8) strengthening surveillance and compliance procedures for controlled substances and ethanol products; 9) becoming a mercury-free work environment by January of 2003; 10) collaborating with the Henry M. Jackson Foundation regarding safety approval for hazardous orders; and, 11) increasing the USU community's knowledge of wellness programs.

During 2001, the EHS Bioenvironmental Engineering Division instituted new processes and improvements to address safety issues which included: 1) complete revisions of the Hazard Communication Course, the Laboratory Safety Course, and the Blood Pathogen Course to ensure compliance with Federal regulations; this included the creation of a new laboratory safety manual and the development of a PowerPoint presentation for the course material; 2) the development of a comprehensive laboratory inspection checklist with associated risk assessment codes (RAC) for ranking deficiencies from minor to severe; 3) the expanded training of EHS radiation survey workers to observe laboratory safety violations, such as improper chemical storage, which had not been a regularly scheduled part of the EHS surveillance duties; and, 4) the revision and simplification of the Biohazard, Controlled Substances and Dangerous (BCD) Form 3207 to enhance its use by USU researchers during the submission of protocols. As a part of its long-term strategic goals, EHS envisions the USU Safety Program serving as a Benchmark for other organizations; EHS recognizes that the accomplishment of this strategic goal can only be achieved through collaboration with the entire USU community and the proactive identification and correction of safety concerns. Throughout 2002, EHS plans to continue its on-going efforts to ensure both safety and wellness for the entire USU community.

Reduction of EHS Oversight in Low Risk Areas. EHS will reduce its oversight and approval processes in low-risk areas. This will be accomplished by: 1) reducing the restrictions for ordering chemicals through the use of the government purchase card; 2) decreasing the number of ancillary CUFS approvals performed by safety; 3) streamlining the paperwork required to submit a proposal through various committees concerned with safety; 4) increasing the efficiency of safety services through the use of USU web sites; 5) providing limited safety items through the USU Pharmacy without charge to the researchers; and, 6) decreasing administrative inventory burdens by providing the ability to manage certain inventories through the use of a USU web site.

Project an Image of Assistance. EHS will strive to project an image of assistance through the following efforts: 1) the projection of an image of assistance versus one of enforcement or compliance monitoring; 2) the immediate identification and response to all safety concerns and questions; 3) the provision of items at a minimum cost when safety issues are identified (i.e., free alcohol replacement thermometers, reduced pricing for safety needles, etc.); and, 4) the development of a user-friendly EHS web site to further the understanding of safety programs and the significance of safety services (i.e., waste pick-up, dosimetry, training, etc.).

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SOM Department of Psychiatry Sponsors a Collaborative Relationship with the Stanley Laboratory of Brain Research.

> **Schizophrenia and bipolar disorder affect more than 4 million Americans at any given time. However, for a variety of reasons, research on these disorders has been severely neglected. Because of this neglect, we know much less about the causes of these diseases than we should know, and we have less effective treatments than we should have. The price we are paying for this neglect is incalculable, including legions of homeless mentally ill persons, jails full of mentally ill individuals charged with misdemeanors, victimization of the most vulnerable, suicides, episodes of violence, and literally millions of individuals affected with these diseases who are leading marginal lives.**
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> - **E. Fuller Torrey, M.D., Executive Director, the Stanley Foundation Research Programs on Schizophrenia and Bipolar Disorder**, 2001 Annual Report.

Background. In February of 1999, during a ribbon-cutting ceremony, the University President welcomed the Stanley Laboratory of Brain Research to the SOM Department of Psychiatry. Through a collaborative arrangement with the University, the School of Medicine, and the Stanley Foundation, the USU community now has access to the Stanley Laboratory's brain specimens from individuals who suffered from diseases such as schizophrenia, bipolar disorder, and severe depression - the largest of such collections in the World. The Stanley Foundation Brain Bank and Neuropathology Consortium is made possible through funding from the Theodore and Vada Stanley Foundation. Its purpose is to collect postmortem brain tissue and to distribute it, without charge, to research groups working on schizophrenia and bipolar disorder (manic-depressive illness).

Current Activities. **E. Fuller Torrey, M.D.**, and his research group continued to provide outstanding expertise to the University throughout 2001. The Stanley Foundation postmortem brain collection for research on schizophrenia and bipolar disorder has over 430 specimens. The USU Laboratory has distributed more than 100,000 sections and blocks of tissue to 120 research laboratories worldwide which are doing research on these diseases. Some 55 large freezers contain the collection located at the Brain Research Laboratory in the USU SOM Department of Psychiatry. The specimens are approximately evenly divided among individuals who were diagnosed with schizophrenia, bipolar disorder (manic-depressive illness), severe depression, and normal controls. Most of the specimens are provided to researchers doing research on schizophrenia, bipolar disorder or depression. For example, during 2000, the Stanley Foundation donated a normal control specimen to a World Health Organization project dedicated toward the establishment of worldwide standards for brain tissue for comparison with prion-caused diseases such as Creutzfeldt-Jakob Syndrome. On April 9, 2001, The Washington Post featured Dr. Torrey in an article entitled "Thinking Outside the Box." The article included the following: The Stanley Foundation is supporting a quarter of the research on schizophrenia and half of the research on manic-depression in both the United States and Europe.

When the Stanley Foundation initially assumed responsibility for the Neuropathology Consortium, it looked forward to the day when it would have hundreds of measurements on the same parts of the brain from many different laboratories. That task is being addressed through the work of **Dr. Michael Knable**

who has examined 69 separate data sets from 14 laboratories on the prefrontal cortex. A total of 17 abnormal markers were identified, which pertained to a variety of neural systems. Schizophrenia was associated with the largest number of abnormalities, many of which were also present in bipolar disorder. Neuropathologically, bipolar disorder was more similar to schizophrenia than it was to severe depression. Major depression was found to be associated with relatively few abnormalities. The majority of abnormal findings represented a decline in function and could not be easily explained by exposure to psychotropic or illicit drugs. A paper on these findings was accepted during 2000 for publication in a special issue of Brain Research Bulletin.

In 2001, the Stanley Laboratory of Brain Research also published an article on prefrontal cortical data in the Brain Research Bulletin. In addition, Dr. Torrey received the William C. Porter Award from the Association of Military Surgeons; and, he published a book, The Invisible Plague: The Rise of Mental Illness from 1750 to the Present. Dr. Torrey's career as a psychiatrist and his research on schizophrenia and other mental illnesses were also featured in The Washington Post and The Washingtonian magazine during April of 2001. In May of 2001, Morley Safer of 60 Minutes also interviewed Dr. Torrey with a similar focus on his research on schizophrenia and bipolar disorder. That interview was featured on the April 21, 2002 edition of 60 Minutes.

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Information Technology.

Background. During 1994, committees were formed at the University by the School of Medicine and the Faculty Senate to address USU's future use of computers and technology in general. With the future development of Information Technology (IT) and Medical Informatics at USU in mind, the University President sent a delegation of seven USU representatives to the American Association of Medical Colleges (AAMC) Information Technology Conference. The conference served to reenforce the University's inclusion of computer-assisted communication and technology within its strategic planning process. With total support from the leadership at USU, strategic goals were developed so that Medical Informatics would be utilized to emphasize distance learning, continuing medical education, computer-assisted medical education, access to medical databases, and other medical information systems. The focus of those efforts, in accordance with the University's mission, would be on the unique educational requirements of military and disaster medicine. In October of 1997, a number of USU information technology-related committees were combined to form the Automated Information Systems Policy Committee (AISPC). Currently, this committee meets monthly to review guidance objectives, identify resources, develop requirements, and plan information technology policy strategies, and training.

Extensive technical improvements were made during 2000 and 2001 in the following areas: servers; desktop computers; software development; teleconferencing; e-mail; network; and, teaching facilities. The USU Information Services Management Center (UIS), while continuously responding to user concerns, long-range technology refreshment plans, and the USU Strategic Plan, has implemented numerous projects, in collaboration with USU's Core Management, to improve technology services, products, and its working relationships with USU community. In addition, UIS updated its mission statement to more accurately reflect its missions and functions. Improvements reported during 2000-2001 include the following: **Servers:** Twenty file servers were upgraded to ten state-of-the-art high performance systems resulting in the stabilization of redundant web and e-mail servers. **E-mail:** Five separate E-mail systems were converted to

Novell GroupWise 5.2 and later upgraded to version 5.5. This action standardized formats, address books, and addresses. It also provided Internet access, a highly desired post office protocol server, and improved the use of attachments and external E-mail; during 2001, UIS also implemented the USU E-Mail Policy to purge mail every 60 days (instead of every 90 days). **Network:** The network was upgraded from a 10 megabit (MB) coaxial cable to a 100 MB twisted pair system; during 2001, UIS formed the Base Ring Committee to facilitate communication, organization, and collaboration between USU, the Armed Forces Radiobiology Research Institute (AFRRI), the National Naval Medical Center, and other Base tenants and subcommands. **Enterprise Database:** Two major applications, Pharmacy and Phase I of STARS II were successfully developed and implemented. Both systems were developed utilizing the Oracle-based Enterprise Data Base and replace old legacy systems. STARS II allows USU faculty and staff to track students from their initial application, through matriculation and graduation. **University Homepage:** The USU Homepage contains over 2,360 pages of information and some 33,100 links to additional information; the vast majority of USU departments now have active homepages and many are sharing teaching and research information via the Internet on a regular basis; during 2001, UIS Webmasters partnered with the USU Faculty Committee to completely redesign the University's Homepage and to build web templates for over 40 departments within the University. **Training:** The UIS training officer provides on-going, face-to-face training for faculty, students, staff and Information System Coordinators, in addition to publishing a quarterly electronic newsletter, which provides information on IT issues; in addition, UIS personnel received professional certification and training (e.g., MCP, MCSE, Oracle, Contracting, Supervisory, and Networking) as appropriate. **Desktop Computers:** During 2001, UIS continued its on-going management of a three-year technology refreshment cycle for 800 desktop computers within USU. **Centralized Software and Support:** UIS managed, tracked, tested, recommended, and distributed UIS-supported software, to include Operating Systems, during the past year. **Help Desk Web Page:** A web site containing useful information regarding UIS support and troubleshooting ideas for users was developed, implemented, and maintained. **Video Teleconferencing:** UIS implemented a substantial improvement of the systems to down-link and up-link video teleconferences.

Customer Support. During 2001, UIS provided support for: 3,000 information systems users accessing e-mail, remote dial-in accounts, Internet Protocol connections, satellite, and software applications; 1,500 dial-in-users; 2,750 telephone and fax lines; and, 1,200 Voice Mail Systems. In addition, as the owner of a Class B Internet Protocol License, USU acts as an Internet Service Provider. and supports areas on and off campus, such as the National Naval Medical Center, 12 off-site Department of Defense activities, and various non-DoD facilities.

Desktop Computers. Following Assistant Secretary of Defense, Health Affairs (ASD/HA), guidance, a plan to lease desktop computers by the University was implemented during 1998, 1999, 2000, and 2001. The plan calls for all basic office automation and teaching computers to be replaced with leased systems. During 2001, 800 desktop computers were in a three-year technology refreshment cycle. The replacement of 300 leased computers will take place during 2002. The process continues to provide standardization, technology refreshment, enhanced budget planning, compatibility, and improved user support. UIS continues its on-going management of contracts to support the leased machines and software licenses for the central computing facilities.

Help Desk. A set of desktop tools, also based on ASD/HA guidance and USU requirements, was recommended by the AISPC and approved by the USU President. In addition, the University signed an agreement under a Maryland State Educational Contract (the Maryland Enterprise Educational Consortium (MEEC) with the Microsoft Corporation which provides site licenses at significantly reduced educational rates. This agreement allows the UIS Help Desk to make the latest Microsoft software available to all faculty, staff, and students. The selection of a single set of desktop tools greatly simplified user support and improved the Help Desk response during 1999, 2000, and 2001. The Help Desk also provides SPSS statistical software, Novell Client software, security systems, and various utility and educational programs to its user population. In addition to the implementation of the desktop computer-leasing program, during 2001, the Help Desk handled 5,773 UIS-directed requests for assistance. The total calls requiring assignment and resolution by the Help Desk totaled 2,124; of this number, 182 tickets were dial-up requests; and, 120 tickets provided assistance with viruses. Throughout the year, the UIS Help Desk alerts the USU community of viruses and assists with virus protection. Help Desk projects for the Year 2001 included: IP tracking and data base maintenance; the testing and deployment of new software products; the deployment and replacement of leased machines; and, the management of UIS-supported products. The Help Desk continues to assist with in-house training on standard operating procedures and with off-site training for professional certification; all of which contributes to the reduction of calls and to an increase in user productivity.

Software Development. In 2001, the UIS Information Engineering Branch (IEB) successfully deployed Phase II of the STARS II application, which completes the first phase of the USU Corporate Data Base. IEB is comprised of experienced software developers; the staff members hold those Oracle and Microsoft professional certifications required for life-cycle methodology in all software engineering projects. IEB has also formalized the processes to perform systems analysis, requirements, re-usable code, testing, and fully repeated processes for system roll-out, to include documentation and training. With the implementation of STARS II, the Admissions and Registrar Office can now electronically process an applicant from an initial application, through matriculation, and graduation, to include the tracking of all courses and grades for the individual student. Faculty and staff utilize STARS II to electronically submit grades to the Office of the Registrar where grades are verified and posted to the web. **This system consolidates and replaces five legacy systems which are no longer accessed**; in addition, EIB acquired a software tool which significantly reduces the time for importing data from the legacy systems into the Enterprise Data Base. As discussed above, the development of a University corporate data base began with the creation and implementation of automated systems to assist the USU Office of the Registrar; additional tools for the location and tracking of personnel, program management, financial administration, and inventory control are currently being developed.

Web Support. In 2001, the UIS Operations Division maintained and supported three web servers: the Primary, Interim, and Back-Up Servers. The Primary Web Server hosts over 3,000 web pages; it runs under sun Solaris with a Netscape Enterprise Server as the web engine. The server administrator upgraded the operating system to monitor and automatically log errors, which resulted in a 99 percent up-time for the server. The Interim Web Server supports 80 Page Masters throughout the University. The server administrator installed “harden procedures” to prevent hackers and security holes which also resulted in a 95 percent up-time. In addition, a new process for the Back-Up Web Server was installed to automatically update the web pages from the Primary Web Server, thus allowing the Back-Up Server to stay current with the Primary Web Server. During 2001, the UIS Web Masters of EIB continued to support the USU Page Masters. This

support included a formal training program for the development and implementation of Section 508 of the Federal Accessibility Act, the use of the Interim and Operational Servers, as well as the provision of a Page Master's User Guide.

Web Development. The Web Masters use a systematic methodology to perform web development activities. Web development projects include STARS II, USU Research Day, the USU Marine Corps Survey, and the USU Social Work Conference. Web projects were developed using Microsoft ASP and run on a Microsoft IIS Server in a Windows 2000 environment. To ensure data integrity and security from intrusions, all servers are routinely monitored and backed up. Also during 2001, it was determined to purchase and install a Firewall System and scanning programs capable of blocking intrusions and to provide mechanisms for creating three levels of security (open to the world via the Internet; closed to everyone outside of the University; and, accessible following verification from outside the University via various accounts, passwords, and verification processes).

Training. During 2001, the UIS Training Officer provided classroom training for all SOM, GSN, MPH, and Graduate Students at USU, as well as personnel located off-site. The Training Officer provided training at the USU Faculty and Staff Orientations which are held quarterly. At the user's request, the Training Officer performed specialized hands-on and one-on-one training on Microsoft Applications, GroupWiseE-Mail, the proper use of network and computer resources, network security, and, all supported UIS software and special requirements. The UIS Training Officer partnered with the USU Security Office in developing and providing security awareness training required for all faculty, staff, and students; and, they coordinated on the implementation of the DoD Security Notice in the Network Log-on. During 2001, the UIS Training Officer developed and electronically distributed, the Quarterly UIS Training Newsletter.

System Operations. During 2001, UIS System Operations made great strides concerning the network systems (Network, Telecommunications, NetWare, and VAX). New and existing hardware equipment was re-designed and installed; and, software was upgraded which resulted in better performance and higher connection rates to the Internet. Due to these actions, USU customers experienced almost 100 percent uptime.

Network. Network personnel are responsible for the University's network design, implementation, maintenance, and configuration management. In 2001, the UIS Operations Division kept all local distribution systems on-line with little, or no, down-time. These local distribution systems distributed high-speed data transmissions between student simulation centers and lecture halls. A new proxy server was also implemented; it allows USU out-bound Internet connection and authentication to military and commercial sites. The Network Operations Center (NOC) was engineered to monitor all network operations from a central location; the NOC has the capability to monitor in-bound and out-bound mail traffic, the remote access server, port communications, and view all network support devices. The base network was reconfigured to provide reliable, redundant network connections, which increased speed and provided back-up for the National Navy Medical Center and other commands.

Telecommunications. In 2001, UIS Communications personnel provided support for 2,750 telephone and fax lines and 1,200 Voice Mail Systems. In addition, support was provided for video teleconferencing and satellite technical support. Significant improvements were made in the reliability of communications, video conferencing, and satellite services. New telephone lines and support equipment were

installed in several recently acquired locations. Video Conferencing technology support was provided to: the GSN's VA/DoD Distance Learning Program; the SOM Departments of Medicine, Preventive Medicine & Biometrics, Psychology, and, Obstetrics & Gynecology; the DoD Partnership for Peace; DoD's Information Management System (PIMS); and, the National Information Learning Center (NILC) in Tblisis, Republic of Georgia. USU has two satellite dishes used to provide programming throughout the University. These dishes are normally set to continuously broadcast CNN and C-SPAN network news; however, other health-related programs are down-loaded upon request; for example, during 2001, satellite programs were down-loaded for the SOM Department of Preventive Medicine & Biometrics and the Armed Forces Radiobiology Research Institute (AFRRI). In addition, during 2001, the UIS Communications personnel worked extended hours with Verizon technicians for five weeks to replace damaged, underground cables and restore telephone service to the USU community.

Netware. In 2001, the UIS Netware Branch processed more than 1,409 trouble call requests. The Netware Administrators, responsible for the Novell Local Area Network (LAN), the GroupWise E-Mail Servers, and two in-bound and out-bound servers, provided support for the following: back-up of over 600 gigabytes of data; space allocations; on-line support of hardware failures; virus protection; testing and implementing vendor patches and upgrades; LAN account creation and deletion; reliable mail and file storage; and, the maintenance, creation, and attrition of over 3,000 e-mail and dial-in accounts.

VAX. The VAX Administrator processed more than 139 trouble call requests for USU customers. The System Administrator is responsible for system maintenance, account creation, and hardware. During 2001, services included the following: file and print management; back-ups and hardware configuration; and, upgrades of the Operating System to resolve problems which were causing system crashes. The System Administrator successfully replaced USU's older and slower mainframe, which supports the financial system, with a more robust computer system. This replacement was performed at no extra cost to the University. In addition, the System Administrator increased performance and reliability and reduced the overall costs of contracts through the addition of improved and faster disc drives for modifying equipment contracts.

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Technology Transfer Program.

Background. Since 1980, Federal law has encouraged Federal laboratories and public academic institutions to transfer inventions and other technology to the public sector, which includes industry, state and local governments, and other academic institutions. This "technology transfer" process allows the benefits of public investment in research and development to be shared with all segments of our society. At the same time, institutions which invest public and tax-free funds in research are permitted to share in the downstream financial benefits of this investment - returning funds for use in further research and to provide limited financial incentives for individual researchers. Technology transfer includes cooperative research and development, patenting and protection of intellectual property, and licensing of inventions in return for a percentage of royalties. Because of the legal issues associated with these mechanisms and other aspects of technology transfer, the USU Office of the General Counsel is directly involved in the oversight of the

University's Technology Transfer Program. Recognizing the need to monitor and market the growing patent and intellectual property developed by the University faculty, the USU President determined that the Technology Transfer Program should be recognized as a formal entity within the University. In 1999, the USU Technology Transfer Program was formally recognized with a mission to enhance interrelationships with USU researchers and to facilitate interaction with the DoD Patent Office. In addition, the USU Vice President for Executive Affairs also established a web site for Intellectual Property and for the new Technology Transfer Program during 1999. Currently, the office is staffed by a Director/Patent Agent and two half-time assistants; the staff directly reports to the USU General Counsel, who, in turn, reports to the USU Vice President for Executive Affairs. The University continues a very close relationship with the Henry M. Jackson Foundation (HJF) in the area of technology transfer. In 2001, the HJF established an Office of Technology Commercialization within its own Office of the General Counsel. The two Ph.D.'s assigned to the HJF office represent a serious commitment to a joint (University/HJF) program in technology transfer.

Current Activities. Because the University is a leader in many areas of biomedical research, an academic institution, and includes Federal laboratories, the USU Technology Transfer Program has been, and continues to be, a successful effort. A significant indicator of the success of this program is its efficient facilitation of the sharing of the USU research in a manner which promotes progress in science and improvement in the quality of health care for both the Armed Forces and the world community. In 2001, the University entered into three Cooperative Research and Development Agreements (CRDAs) and 31 Material Transfer Agreements, filed (in cooperation with the HJF) ten patent applications and nine provisional patent applications, and licensed one invention. In addition, numerous faculty researchers received information and guidance from the staffs of the USU Office of Technology Transfer and the HJF Office of Technology Commercialization. Significant efforts were also made in managing and maintaining previously protected intellectual property, CRDAs, and licenses. Significant highlights during 2001 also include: 1) continued development, in conjunction with HJF and several faculty members, of a Joint Patent and Technology Working Group; 2) involvement in the University's annual Research Day, including participation in a break-out session on technology transfer; 3) funding of short- and long-term research and educational efforts through special project funds and endowment accounts administered by the HJF; 4) direct funding support for the SOM's newly established Institute for Vaccine Research; 5) royalty sharing for eight faculty researchers; 6) limited funding of graduate student stipends; and, 7) arranging a patent incentive award for a technician who rendered important contributions to SOM technology development over a period of ten years.

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RESOURCE STEWARDSHIP

We will optimize resources to efficiently and effectively implement USU core capabilities.

- USU Strategic Plan, Goal 3.

New Construction on the USU Campus.

Background. Since 1978, there has been no additive construction to support USU activities despite the growth in the number of degree-granting programs conducted by the University and major increases in the cost-effective oversight responsibilities assigned to the USU by the Office of the Assistant Secretary of Defense for Health Affairs (OASD/HA). Some of the expanded responsibilities include: the Graduate School of Nursing (GSN); administration of the TriService Graduate Medical Education (GME) Programs for the National Capital Region; mandated professional Continuing Health Education (CHE); and essential credentialing programs for the MHS. In addition, the accrediting entities for the University have continuously recommended that the USU address the expanded academic program requirements for small classrooms; and, they have expressed serious concerns over the separation of the GSN faculty and students between two locations, which adversely impacts student instruction, mentorship, and counseling. Between September 1993 and December 1997, USU was prohibited from participating in the military construction process. However, following the December 1997 decision of the Secretary of Defense that the University should remain open, as stated in Program Budget Decision 711, the USU Vice President for Administration and Management (VAM) was directed by the USU President to provide oversight for the resubmission of all documentation and related efforts required for the construction of a fifth building on the USU campus. The VAM coordinated all efforts with the Vice President for Resource Management and the Deans of the SOM and GSN.

On April 4, 1997, a Health Affairs site team determined that the construction of a fifth building at USU in Fiscal Year 2001 would eliminate leasing costs and would be cost-effective. Following that determination and extensive coordination by the VAM, on March 26, 1998, Design Authorization 98-N-10 was provided to the Naval Facilities Engineering Command with the following directions: 1) the inclusion was to take place in Fiscal Year 2001; 2) the scope of construction was to include 8,312 gross square meters; 3) the design amount was $15,000,000; and, 4) DD Form 1391 and a Draft Program for Design were provided with the authorization. The Navy Facilities Engineering Command completed its call for contractor bids on the design requirements for the USU construction project and remained on hold until the USU construction was approved by Health Affairs. In May of 1998, Health Affairs determined that construction at USU would not be included in the Fiscal Year 1999 Defense Health Program (DHP) MILCON package; and, the Surgeons General would be required to identify funding from their Medical Construction Programs if the USU project were to be included in the DHP MILCON Program. **In June of 1998, the Senate Committee for the Military Construction Appropriation Bill for 1999 urged "the Department of Defense to address the requirement for a fifth building construction project in the Fiscal Year 2000 budget."** In December of 1998, the USU President resubmitted a request to Health Affairs requesting that the construction costs of the USU building be addressed as a separate entity and not be resourced from the limited construction budgets of the Surgeons General.

During 1999, **the Military Construction Appropriations Bill for FY2000 included the following: "The Tricare Management Agency is directed to accelerate the design of this project (the construction of a fifth building on the USU campus), and to include the required construction funding in its fiscal year 2001 budget request."** In response to the congressional directive, and, in its capacity as the Executive Agent for USU, on October 26, 1999, the Navy Bureau of Medicine (BUMED) Facilities Planning and Programming Division initiated the contracting process for a Project Planning Study. The first phase of the USU Project Planning Study, to develop a quantifiable needs assessment for space, began on December 6, 1999 at the USU campus. To facilitate the verification of the study, the Office of the Surgeon General of the Navy also established a Study Team to discuss and validate the identified requirements with appropriate entities within the MHS; and, the USU President also established an ad hoc committee to assist the VAM. A contractor was hired by BUMED, using USU funding, to prepare supporting documentation and the planning study.

To accommodate the rapid turn-around of the first phase of the study, which was to be provided in draft form to the TriCare Management Agency by late January of 2000, the VAM organized and provided to all concerned parties, inclusive background notebooks which provided documentation, projected space requirements, and mission-related information for the **nine entities included in the Planning Study: 1)** the Graduate School of Nursing (GSN faculty and staff are housed in leased space in Silver Spring, Maryland; the separation of faculty and students has been identified as a concern by the GSN accrediting entities; the new construction would: unify the GSN faculty, staff, and students; eliminate the leasing of space; and, facilitate the degree-granting GSN distance learning programs); **2)** USU-wide small classroom requirements (USU small classrooms and lecture halls are already scheduled at capacity and do not allow flexibility for the SOM or the GSN; the new construction would provide some 12,065 gross square feet of urgently required small classroom and lecture areas with distance learning/military readiness capabilities); **3)** Continuing Education for Health Professionals; **4)** the Military Training Network; **5)** Graduate Medical Education (to include the Administrative Office for the National Capital Consortium); **6)** the Office of Educational Affairs (to include USU readiness and simulation requirements); **7)** Preventive Medicine and Biometrics TriService Tropical Medicine and Master of Public Health Programs; **8)** the TriService Nursing Research Program; and, **9)** requirements of the Office of the USU President, to include the USU Chaplain.

<u>BUMED Study Validates the Proposed Construction.</u> The BUMED Study Team focused on two primary areas of concern: 1) the functional shortfall of current and projected requirements for small, multi-functional, and multi-configuration capable classrooms; and, 2) the cost-effective relocation of the Graduate School of Nursing (GSN), Continuing Education for Health Professionals (CHE), the Military Training Network (MTN), and Preventive Medicine and Biometrics (PMB) staff from leased space to the USU campus. The BUMED Study Team coordinated a justification/validation process with the Services for the requested space. Following the validation process, a memorandum was completed by BUMED and forwarded by the Navy Surgeon General on February 17, 2000, to the Chair of the USU Executive Committee; the memorandum recommended that the Surgeons General pursue a joint decision to program funding for the proposed construction of Building E on the USU campus. On April 12, 2000, USU was informed by BUMED that a consensus had been reached among the Surgeons General on the following factors which represented **the position of the USU Executive Committee: 1) the project represents validated space requirements and is needed; 2) the current estimated project cost ($9 million) is appropriate; and, 3) the project should be programmed by TMA (TRICARE Management Activity) utilizing standard milcon processing milestones (i.e., FY05 or later)**.

Scope of the Construction Project. The total scope of the proposed construction project is 56,020 gross square feet which includes underground parking. The Program for Design distributes 41,055 gross square feet to meet the University's requirements for ample circulation associated with the movement of students and staff between classrooms. The 41,055 square feet will be constructed with a fibre-optic backbone throughout the occupied portions of the building and connected to the existing USU IT network. Breakout of the 41,055 square feet reflects as follows: Education Offices/Administrative Support - 21,315 gross square feet; Classroom/Classroom Support Space - 12,065 gross square feet; General Support (Toilets/Lockers, etc.) - 4,346 gross square feet; Distance Education Production Laboratory (Studio) - 2,654 gross square feet; and, Computer Learning/Testing Area (20 Stations) - 675 gross square feet.

Preliminary Studies Required for the USU MILCON Project Are Completed. The coordination process for the proposed USU construction project was developed using the Defense Medical Facilities Office, Office of the Assistant Secretary of Defense for Health Affairs Space and Equipment Planning Systems (SEPS). Since November of 1999, **Mr. James Burke**, Bureau of Medicine Facilities Division, has provided extraordinary support in the successful management of the entire process. The Bureau of Medicine, the Engineering Field Activity Chesapeake, Naval Facilities Engineering Command, and the TRICARE Management Activity, Health Affairs, directly coordinated in the development of the construction project for USU. **The following studies/analyses have been completed and provided in a Project Notebook dated October 2000:** the DD Form 1391; the Facility Study (to include graphic materials); the Site Survey Checklist; the Program for Design; the Economic Analysis; the Planning Study (to include validation of requirements); and, the Statement of Architectural Engineering Services. The Environmental Assessment Study, a process initiated in October of 2000, was coordinated and subsequently completed. As a result, in mid-November of 2001, USU was informed that the proposed construction will **not** adversely impact the environment; and, an Environmental Impact Statement will **not** be warranted. Based upon the Environmental Assessment findings, on November 29, 2001, USU forwarded, through its Chain-of-Command, a request to the Chief of Naval Operations for a formal determination that the proposed construction on the USU campus will have no significant impact on the environment. The next step is the design process.

Funding for the USU Construction. On September 25, 2001, USU was notified by BUMED that its construction project is now in the TRISERVICE Medical MILCON Program for Fiscal Year 2006 at a total cost of $9,300,000. BUMED is currently proceeding with a formal request for design authorization from the Defense Medical Facilities Office (based on available funds); the estimated cost of design is $930,000.

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Navy Base Allocation of Space to USU. From 1998 through 2001, the Vice President for Administration and Management (VAM), as directed by the USU President, and the USU Facilities Division coordinated with the National Naval Medical Center (NNMC) for the reallocation of space currently occupied by the Naval Medical Research Center (NMRC). NMRC began its relocation from the Naval Base to the Forest Glen community near the Walter Reed Army Medical Center during 1999; the relocation process for NMRC was completed during July of 2001. Inclusive reviews and cost analyses were conducted by the Vice President for Administration and Management and the USU Facilities Division; all findings were coordinated with the USU President, the Deans of the SOM and the GSN, the USU Vice President for Resource Management, and other appropriate USU management, to ensure that the projected renovation and annual

costs for the reallocated space could be absorbed within the USU budget. Projected reviews and analyses included: 1) information systems requirements; 2) telephone, fax and copier equipment; 3) minor construction; 4) furniture; and, 5) maintenance costs to include utilities and janitorial services. Following agreement over funding sources and a thorough coordination process, the USU President approved moving forward to request the reallocation of space from NNMC to the University.

Memoranda of Understanding with NNMC Are Completed. USU and NNMC completed memoranda of understanding to reallocate responsibility (from NNMC to USU) for Buildings 53, 59, 79, 28, and 139 which have been vacated by NMRC. Building 53 was assumed by USU in July of 2001; Building 59 was turned over to USU during 1999; Buildings 79 and 28 were turned over to the University during 2000; and, Building 139 was allocated to USU in February of 2001.

Building 53. Building 53 is a two-story structure with an additional mid-level basement which houses the building and hyperbaric mechanical support systems. The allocation of Building 53, which includes approximately 32,285 square feet, addresses USU's urgent requirements for laboratory, administrative, and storage space; these requirements will **not** be addressed by the proposed construction of a fifth building on the USU campus. Building 53 includes 12 large laboratories and several thousand usable square feet of administrative space. At the request of the USU President, the Dean of the SOM directed his space committee to make recommendations through him to the USU President for the allocation of space on the second floor of Building 53. That process continued throughout 1999, 2000, and 2001 with the following results:

- **Department of Psychiatry.** The USU SOM Department of Psychiatry and the Stanley Foundation moved initially into first floor space in early 1999. Signed agreements were completed by all parties; and, the University has been reimbursed by the Stanley Foundation for an appropriate percentage of the costs of operating the building. Currently, the Department of Psychiatry and the Stanley Foundation together occupy approximately 6,567 square feet of laboratory, administrative and storage space on the first and second floors, to include hallway areas dedicated to the storage of freezers.

- **Department of Radiology and Nuclear Medicine.** During 2000, the Department of Radiology and Nuclear Medicine moved a Division, largely resourced by a grant, into 1,870 square feet of administrative and storage space on the second floor of Building 53; since then, an additional 156 square feet of storage space on the first floor was also allocated to the Division; resourcing was coordinated by the Vice President for Resource Management with the Department of Radiology and Nuclear Medicine for extensive information system requirements and minor renovations; all have been completed and the Division is currently occupying 2,026 square feet.

- **Graduate School of Nursing.** One room, on the second floor, with 635 square feet, was allocated to the Graduate School of Nursing for mentoring, counselling, and teaching requirements; minor renovation, which created five working areas, was completed; and, the space was used during 2001.

- **Department of Neurology.** The Department of Neurology was allocated one large laboratory (746 square feet) on the second floor; renovation plans were coordinated during 2001; construction, funded through a Neurology grant, began in March of 2002 and is expected to be completed by mid-2002.

- **Department of Medicine.** The Department of Medicine, the Division of Clinical Pharmacology, completed its coordination process; and, the relocation took place in March of 2002. Clinical Pharmacology currently occupies 2,630 square feet of laboratory, administrative, and storage space on the second floor of Building 53.

- **Naval Medical Research Center.** The Naval Medical Research Center, NMRC, as a result of collaborative efforts with the three USU Departments of Military and Emergency Medicine; Psychiatry; and, Anatomy, Physiology and Genetics and coordination with the USU Vice President for Resource Management, will be responsible for the maintenance and related costs of the hyperbaric chambers (hyperbaric chambers - 7,215 square feet) located on the first floor of Building 53.

- **USU Multidiscipline Laboratories - Common Area.** A large conference room, located on the second floor, with 676 square feet, was renovated during 2000 and was used throughout 2001 by the USU community.

- **Information Services Management Center.** The USU Information Services Management Center (UIS) was allocated two rooms (approximately 318 square feet) for the storage requirements of the support equipment for the information systems in Building 53.

- **Remaining Space for Allocation.** Approximately 979 square feet (Rooms 53-111 and 53-112A), located on the second floor, remain open for allocation by the University Space Review Committee. The annual utility bill for Building 53 (32,285 square feet) is estimated at $346,732; the estimated custodial requirements for one year is estimated at $132,250. The VAM will continue coordination efforts with the Vice President for Resource and Management and all entities allocated space within Building 53 for the equitable distribution of these costs.

Building 59. Building 59, a two-story structure, has 4,072 usable square feet which includes an immersion pool/tank, a physiology lab, an instrumentation lab, and divers' lockers. Following minor renovations completed during 1999, investigators from the Department of Military and Emergency Medicine moved into Building 59. Building 59 receives its information systems support through equipment located in Building 53.

In addition to research grants administered by the Department of Military and Emergency Medicine, the immersion pool will also facilitate collaborative efforts between three University Departments (Military and Emergency Medicine; Anatomy, Physiology, and Genetics; and, Psychiatry). In addition, the course work presented in the Military Applied Physiology Course, Operational Emergency Medicine Skills, and the recently approved Graduate Education Program in Applied Human Biology (Undersea Medicine and Aviation Physiology) will be significantly enhanced by directly exposing students to the ongoing applied research in Building 59. Building 59 will support collaborative research for the above mentioned USU Departments. The annual utility bill for Building 59 is estimated at $39,369; the estimated cost of annual custodial requirements for Building 59 is approximately $5,586.

Building 79. Building 79, adjacent to Building 59, is a two-story structure with an unfinished second floor; it offers 1,066 usable square feet which is currently planned to support the recently approved USU Graduate Education Program in Applied Human Biology (Undersea Medicine and Aviation Physiology). The annual utility bill for this building is estimated at $6,777; the annual custodial requirements will

be calculated when the space is utilized; no expenses are expected during 2002; a custodial projection for 2003 is $6,405.

Building 28. Building 28 is a two-story structure with a total of 5,155 square feet. Renovation has been completed and by mid-2002, it will be used by two USU activities: the Graduate School of Nursing and the SOM Department of Medical and Clinical Psychology. The two activities will be located on the second floor of the building in 2,571 square feet. Space (450 square feet) on the first floor is currently being renovated for use as bathrooms; they are scheduled for completion in 2002. At present, the Logistics Division is scheduled to use the first floor space (unheated/no custodial service) for the storage of large research/ medical equipment, etc. Utility costs are estimated at $17,065; the annual custodial costs are estimated at $12,035.

Building 139. Building 139 is a one-story structure with approximately 5,562 square feet which will be available for the USU SOM Department of Surgery and the USUHS/Windber Medical Center/Walter Reed Army Medical Center/Department of Navy Clinical Breast Care Project. This research project will utilize a multidisciplinary approach as the standard of care for treating breast diseases and breast cancer. The multidisciplinary model integrates prevention, screening, diagnosis, treatment, and continuing care; the project is further unique in the proposed incorporation of advances in risk reduction, informatics, tissue banking, and research. The Clinical Breast Care Project will pay for the required renovations; it will also pay all costs associated with the building to include utility, maintenance, and custodial requirements. Renovation is on-going and expected to be completed during 2002.

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Renovation/Replacement Projects.

Laboratory Renovations throughout Buildings A, B, C, and D. During 2000, with the approval of the USU President, and the identification of funding by the Vice President for Resource Management, the Vice President for Administration and the USU Facilities Division provided oversight for the renovation of 2,310 square feet of laboratory space throughout the USU complex. Laboratory renovation was completed, through the Dean, SOM, for four Departments: Biochemistry; Obstetrics & Gynecology; Radiology and Nuclear Medicine; and, Anatomy, Physiology and Genetics. During 2001, one laboratory with 468 square feet was renovated within the Department of Biochemistry. With the 33,127 square feet of renovated laboratory space that took place from 1993 through 2000, combined with the 468 square feet of renovation during 2001, the total of renovated laboratory space is approximately 33,595 square feet. This amounts to 38.6 percent of the 86,926 square feet of laboratory space in the USU complex. Three office areas within the SOM were also renovated for the Department of Anesthesia for a total of 559 square feet; in addition, 380 square feet of office space was renovated to accommodate the relocation of University Affairs.

Renovated Space in Building 53. Throughout 2000 and 2001, with the approval of the USU President (and the identification of funding for contracted projects by the Vice President for Resource Management), the USU Facilities Division provided oversight for contracted work, support, and manpower from its Division staff for the renovation of a total of 7,899 square feet of laboratory and administrative space in Building 53. The SOM Departments of Medicine (Clinical Pharmacology - 2,630 square feet), Psychiatry (1,932 square feet), and Radiology and Nuclear Medicine (2,026 square feet) represented a total of 6,588

square feet of renovated space for the SOM; the Graduate School of Nursing had 635 square feet renovated for mentoring and educational use; and, the MDL Division of Teaching and Research Support had a conference room with 676 square feet renovated for use by the entire USU community. All of the extensive relocation and furniture requirements for the USU personnel assigned to these renovated spaces were coordinated by the USU Logistics Division.

Heating/Ventilation/Air Conditioning (HVAC) Replacement Project. Following the identification of environmental and health concerns reference the quality of air throughout the USU complex and the inability to procure replacement parts for the antiquated USU HVAC system, the Facilities Division, with the approval of the USU President, coordinated with the Public Works Center (PWC) to design a complete replacement of the USU HVAC system. Building B was selected as the first area for renovation because it had the poorest air circulation in the complex. Phases 1 through 7 have been completed. Phases 1-7 ($8,900,000) included the construction of a mechanical room and the replacement of the HVAC system throughout Building B. Phases 8 ($2,351,692) and 9 ($2,091,686) have been funded, are ongoing, and will complete the HVAC replacement in Building C by the end of 2002. Phase 10 is estimated at $2,800,000 (Building D); and, very rough estimates for Phase 11 (Building A) are approximated at $4,000,000. It is anticipated that funding for the final two phases may be identified before the end of 2002. This on-going project has required extensive relocation of USU personnel; and, the USU Logistics Division has successfully worked with the contractors to efficiently coordinate these efforts.

Anatomical Teaching Laboratory Renovation Efforts. During 1998, it was identified that the backroom/storage areas containing the freezers and work space for the Anatomical Curator required significant renovation. Late in Fiscal Year 2001, the Vice President for Administration and Management requested a review of the project and began coordination with the Vice Presidents for Resource Management and Teaching and Research Support for the renovation of both the work areas and the freezers. With the approval of the USU President, and the identification of funding by the Vice President for Resource Management, the Facilities Division coordinated with the Navy Public Works Center (PWC) for an accelerated design for construction. That effort concluded successfully and $201,254 was obligated for the construction requirements during September of 2001. Resource Management, through the USU Contracting Directorate, also obligated funding for the purchase of new freezers. The project was successfully completed during March of 2002.

Plaza and Elevator Repair. When the University was originally constructed, a drainage system was not provided under the plaza. As a result, there had been a steady leakage of water throughout the underground garages and various areas of the ground floor level. Separate attempts had been made to correct this concern over the past years; however, none resolved the problem. During 2000, the Facilities Division worked with PWC to design a repair project for the plaza which included four phases. The first two phases were funded during 2000 and completed. Funding in the amount of $654,112 was funded in September of 2001 for the final two phases. Work has now been completed and the contractors have finished some minor related projects to include the replacement of concrete.

Funding has been obligated for the repair/renovation of the elevators in Building A (three elevators) and Building B (four elevators). Determination of the order of renovation for the 11 elevators throughout Buildings A, B, C, and D was based on the number of repair calls and general deterioration of the individual

elevators. The renovation of the 11 elevators will take place one at a time to reduce the level of inconvenience to the USU community; estimated construction time per elevator is four months. Construction of the Building A elevators began in August of 2001, with an estimated completion date in late 2002.

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Resource Management Programs.

Background. The areas of responsibility described below are under the oversight of the USU Vice President for Resource Management. **Mr. John E. Dexter** was selected as the first USU Vice President for Resource Management in June of 1990; he served in that capacity until his retirement in January of 2001. Following an extensive search, the second USU Vice President for Resource Management, **Mr. Stephen C. Rice**, was selected and assumed the position in January of 2001.

Financial & Manpower Management (FMG). The University closed out a successful financial year on September 30, 2001. At the end of the Fiscal Year 2001, the Operations and Maintenance account (one year funding) had an obligation rate of 99.994 percent. During the last quarter of Fiscal Year 2001, USU received a supplemental allocation of $5.l million ($600,000 restoral of withhold and $4,500,000 distribution of supplemental appropriation); these additional funds were applied against long-standing requirements in the University's maintenance and repair budget. In coordination with the USU Facilities Division and the Vice President for Administration and Management, FMG obligated funds through the Navy Public Works Center for the following renovations and repairs: 1) the heating/ventilation/air conditioning (HVAC) replacement/repair project; 2) completion of the plaza repair project; 3) the upgrade of the elevators in Building B; and, 4) the renovation of the storage and working areas of the Anatomical Teaching Laboratory. The University was also able to make significant progress on its equipment back-log, through its funding of over $1.5 million in support equipment. In the Procurement account (three year funding for capital equipment over $100,000), the University spent $270,000 for a Patient Simulator against an available budget of $300,000; the remaining funds will be applied against 2002 requirements. The two University Research, Development, Testing and Evaluation (RDT&E) accounts (two-year funding) were obligated as follows: the Defense Health Program (DHP) portion of $2,919,000 was spent in its entirety for the Head and Neck Injury project; and, the DDR&E portion of $1,941,000 was spent for intramural research support, to include $621,000 spent on research-related equipment; the remaining funds in the DDR&E account will be used in 2002.

The University's government travel card program has been recognized by the DoD for consistently maintaining the lowest travel card delinquency rate in the entire Department. Christopher Slack, Bank of America's Senior Vice President for Government Services, has praised the University for a program that "is a benchmark and showcase of best practices." More than 1,200 USU employees have government travel cards; and, approximately 200 individuals travel each month. A process has been established at USU to ensure the continuation of USU's low delinquency rate. Approving officials must sign travel claims promptly and submit them to FMG, which must review and forward all properly completed vouchers to the Defense Finance and Accounting Service (DFAS) within two days, or immediately notify the USU travelers of any discrepancies. Students performing long-term temporary duty are able to file partial claims each 30 days, thus ensuring that they have the funds to pay their bills when due. Additionally, DFAS has been paying USU claims, on average, within four days of receipt, well ahead of the DoD requirement of 15 days. A final

reason for the University's outstanding record is that USU senior leadership has made it clear to University cardholders that delinquency of payments is unacceptable. In 2001, USU also entered into a partnership with the Navy Bureau of Medicine and Surgery (BUMED) to jointly manage the funding levels of USU's procurement account in order to maximize benefits for both USU and the Defense Health Program (DHP). Under this agreement, USU is responsible for executing the University's procurement program and requesting and justifying any long-term capital equipment requirements; BUMED assists in the management of the appropriation process, facilitating the matching of funds with the timing of procurement actions. Also during 2001, there was new emphasis on shared problem solving of budgetary issues with all of the USU activity heads and chairs; this was initiated during numerous individual meetings in the mid-year review process which included an increase in the level of detail and justification in the USU budget submissions from each activity head and chair.

Contracting Activities. During 2001, the USU Contracting Directorate provided significant support to the many unique programs of the School of Medicine, the Graduate School of Nursing, University Activities, the Armed Forces Radiobiology Research Institute, and numerous DoD initiatives and programs. The Directorate processed over 1,700 USU (Operations and Maintenance (O&M) funded) requirements totaling approximately $12,858,000 in support of USU Departments and Activities. In addition, the Directorate received approximately 55 requirements, totaling $13,330,560 in extramural (direct citation) funds from numerous Federal and DoD agencies and activities in support of fifteen major programs. This amount included funding for numerous scientific research programs which are contracted with the Henry M. Jackson Foundation for the Advancement of Military Medicine; some examples follow: the Medical Executive Skills Training Program which provides training to the military's health care executives; the Center for Casualty Care Research (CCRC) which provides support and consultation services to several Federal Agencies, to include the FBI and the U.S. Marshals Service, and includes the Hazardous Materials Response Training Program, a cooperative effort with the FBI; the Deployment Health Center located at the Walter Reed Army Medical Center, which in addition to research on Gulf War Illness, also has expanded to include a variety of diseases encountered during deployments; the Center for Prostate Disease Research (CPDR) which conducts research into prostate disease through funding provided by the CPDR Endowment which is now valued at $22,000,000; the Center for Disaster and Humanitarian Assistance Medicine (CDHAM) which is providing training and education for DoD and equipment and humanitarian assistance to Mexico and other Central and South American countries; and, the Center for Ergonomics and Workplace Health which is studying ways to make the Federal workplace a healthier and more productive environment. In addition to the above programs, the Directorate also awarded and administers a $6,000,000 personal services support contract for the U.S. Army Center for Health Promotion and Preventive Medicine. The Directorate now administers and manages funded programs valued at well over $50,000,000. During 2001, the USU Government Purchase Card Program continued to expand with over 12,400 purchase card transactions being conducted, totaling approximately $6,342,000 in purchases.

Grants Management. In January of 2000, the Office of Resource Management was delegated responsibility for the fiscal and administrative management of USU-awarded grant agreements. The Vice President for Resource Management established the Grants Management Office and the position of Grants Officer to ensure effective and efficient administrative management for USU-awarded grant agreements. Since its establishment, the Grants Office has been fully staffed with three permanent employees: a Grants Officer; a Grants Management Specialist; and, a Grants Management Assistant. During 2001, the Grants

Office provided a full range of grant management services in support of the University's research community by awarding grant or cooperative agreements; this support included serving as a business advisor and providing fiscal management and guidance to grant recipients and investigators. In its second year of operation, the Grants Office awarded 7 new grant agreements worth more than $6,700,000; and, it completed 125 grant modifications. Currently, there are 110 active USU awarded grant agreements ranging from $5,000 to $48,000,000 which are managed by the Grants Office. The total award value is approximately $253,000,000. There are approximately 75 principal investigators conducting research on projects awarded to approximately 12 grant recipients. A majority of the awards go to the Henry M. Jackson Foundation; the remaining awards go to other non-profit organizations including universities, private foundations, and institutions. Currently, there are 33 Agencies providing funding support. The Grants Office processes an average of 48 invoices a month for payment; these invoices are paid at nine pay stations (DoD and civilian). The Grants Office also provides oversight for the TriService Nursing Research Program, an annual program valued at approximately $9,000,000 with more than 70 grants.

Resource Management Information. The Resource Management Information Office (RMI), which became fully staffed during 2001, is comprised of the Systems Administration and the Information Systems & Services Branches. The RMI develops, maintains, and administers the University's resource management information systems, primarily, the College and University Financial System (CUFS), DoD's Standard Procurement System (SPS), and Research Administration's Grants Management System (COEUS). During 2001, RMI worked on the following special initiatives: 1) **Establishment of the Resource Management Information System Search Committee -** In response to one of the University's Strategic Planning Objectives, RMI was appointed as the lead agent for finding a suitable replacement for the University's principal management information system, CUFS. The Resource Management Information System Search Committee was established selecting membership from key USU functional areas in order to effectively evaluate the available system options and ultimately propose a recommended implementation plan. To assist in this process, a consultant was contracted to complete a functional requirements document in support of the CUFS upgrade; 2) **Development of a Directorate of Contracting Web Page -** A web page was developed for the Directorate of Contracting to assist in the dissemination of guidance to the USU and vendor communities on various acquisition issues such as policy, regulations, solicitations, proposals, the Government Purchase Card, and other procurement guidelines; 3) **Transfer of Disbursements (Vendor Pay) Function to the DFAS Center in Denver -** Due to a mandate for a Defense Finance and Accounting Service (DFAS) realignment, the disbursements (vendor pay) function was transferred from the DFAS location in Omaha (OPLOC) to the DFAS Center in Denver. This transfer, ultimately a successful effort, necessitated an extensive modification of the automated disbursement program in CUFS to accommodate the unique coding characteristics used at the Denver Center.

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